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ABSTRACT

This curriculum guide on food and nutrition is one of seven subject area guides developed for use in consumer and homemaking education in Texas. Covered in the individual sections of the guide are the following: program and curriculum planning; teaching handicapped and disadvantaged students (student characteristics and teaching strategies); seventh and eighth grade homemaking; Homemaking I; Homemaking II: Homemaking III; and a semester course in homemaking. Addressed in the homemaking courses are some or all of the following: nutrition, meal management, consumer aspects of buying food, basic kitchen skills; food preparation; food preservation and processing, relating food and nutrition skills to jobs, and food service career preparation. The chapter dealing with the semester course includes suggestions for food and nutrition laboratories. Also provided are a series of 52 transparency masters and a food and nutrition reference list. (MN)

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FOOD AND NUTRITION GUIDE

Food and Nutrition is one of seven subject area guides developed for use in consumer and homemaking education in Texas. Additional guides are available in the areas of Child Development; Clothing and Textiles; Consumer Education; Family Living and Parenthood; Home Management; and Housing, Home Furnishings, and Equipment.

Contents of the Guide

Each subject area guide is correlated closely with the *Conceptual Framework and Basic Competencies for Vocational Home Economics in Texas.* Content for each subject area is based on the competencies needed by homemakers. Sub-competencies are identified for each competency. Content is developed through learning and evaluation experiences.

Each guide has colored dividers to indicate 7th and 8th Grade Homemaking, Homemaking I, II, III, a Semester Course, and Transparencies and References as follows:

7th and 8th Grade Homemaking – yellow
Homemaking I – orange
Homemaking II – green
Homemaking III – pink
Semester Course – blue
Transparencies – tan

Competencies and corresponding *sub-competencies* are listed at the beginning of each section. Competencies include the knowledge, skills, affective behavior and/or judgment needed by homemakers. Sub-competencies are the measurable behaviors expected to result from the completion of the learning and evaluation experiences. *Concepts* related to the competencies are outlined in the left columns. *Learning and evaluation experiences* to develop the competencies are listed in the right columns. Appendices include *transparency masters* keyed to learning and evaluation experiences and a *reference list* of books and sources of teaching aids which will assist the teacher in developing a reference library.

How to Use the Guide

The subject area guides are designed to aid the teacher in identifying the concerns of seventh to twelfth grade students and the concepts appropriate for each grade level. The guides are not designed for use as a specific curriculum in any particular community or situation. Teachers will need to use their own judgment, initiative, imagination, and creativity in working cooperatively with students, parents, the school, and the community to develop an effective consumer and homemaking education program. The subject area guides are intended to guide, not dictate, the content of consumer and homemaking education courses.

Teachers should not expect to use all the suggested experiences in one class. Teachers may adapt, supplement, and expand the suggestions in view of the specific needs, interests, abilities, backgrounds, and levels of maturity of students. The variety of experiences included should enable teachers to select and use those teaching-learning experiences that will help their students reach the objectives the teacher feels are important. Many experiences can easily be adapted for use in FHA/HERO, home or extended experiences, or adult education.

Schools which do not offer all of the sequence courses outlined in this guide should consider combining content of different levels to meet local needs. Teachers and advisory council members should review the suggested course content for each sequence level and the competency needs of students enrolling in the courses offered. Competencies to be developed in each course should be selected by students' needs and backgrounds. This may involve including basic concepts covered in 7th and 8th Grade Homemaking in Homemaking I, or adding more advanced concepts from Homemaking III to Homemaking II. The subject area guide should be a valuable aid in local program planning and curriculum planning whatever the situation may be.

Program Planning

Effective program planning for consumer and homemaking education in the local community involves: (1) understanding the community, (2) understanding human growth and development, and (3) planning cooperatively.

Understanding the Community. Planning and carrying out an effective consumer and homemaking education program requires that the teacher understand the community in which students and their families live. A study of social, economic, and cultural conditions in the community will contribute to this understanding. Such a study involves determining the representative types of home and family backgrounds; and appraising community attitudes, prejudices, values, industries, practices, resources, influences, and power structures. Because patterns of home and community life largely determine the needs and interests of individuals, knowledge of the community can focus on the problems of everyday life for the student, and can serve as a basis for curriculum planning.

Understanding Human Growth and Development. The development of the individual from birth throughout life is characterized by the accomplishment of certain tasks at each stage of development. Understanding these tasks and the characteristics related to them is an important part of program planning in consumer and homemaking education. Knowledge of developmental tasks has several implications for the teacher. The tasks indicate types of problems for which students must seek solutions. The teacher must realize that individuals of the same chronological age are not necessarily in the same stage of development. Because tasks arise at or about a given time in the student's life, however, the teacher should be able to anticipate the teachable moment and to provide learning experiences which will meet the needs, interests, and abilities of students.

Cooperative Planning. Planning the consumer and homemaking education program cooperatively with students, parents, teachers, administrators, and others in the community has been shown to result in more effective learning and a better curriculum than would be possible in a program designed by the teacher alone. Students, parents, and community members may be involved through questionnaires, planning groups, and advisory councils. Professionally trained persons, including the school principal, other homemaking teachers, teachers in other subject areas, guidance personnel, and local and area supervisors also provide essential contributions. When preliminary plans have been developed, the teacher will want to discuss program planning with students to provide greater insight into their needs and interests.

Curriculum Planning

Curriculum planning is facilitated by identifying expectations for the students in the form of competencies and sub-competencies. What should the student know and be able to do at the completion of study? Concepts to be studied can be identified once the competencies and sub-competencies are known. The student then gains knowledge through the completion of appropriate learning and evaluation experiences. The competencies, sub-competencies, and concepts included in this book are only a guide. A careful evaluation of your particular teaching situation and student needs will be the first step in good curriculum planning.

Learning experiences in consumer and homemaking education may be provided through the classroom, home, community, and Future Homemakers of America/Home Economics Related Occupations (FHA/HERO). Students' interests are more easily sustained if a variety of experiences are provided for learning by seeing, hearing, feeling, and doing. The learning experiences suggested in this guide provide a variety of choices related to the concepts. They are designed to help students achieve the terminal performance objectives and the competencies identified. The teacher can select learning and evaluation experiences from those suggestions, or develop alternatives. The creative instructor will select, adapt, or add experiences to enable students to achieve the competencies.

Evaluation determines the extent to which students have reached the objectives and achieved the competencies designated for each course. Such evaluation is a complex task. Effective evaluation is a continuous process which involves determining behavioral objectives, collecting evidence of behavioral changes, interpreting the evidence collected, and using the evidence to improve the curriculum. The innovative teacher will rely upon a variety of methods in all domains of learning for student assessment.

Methods of evaluation include paper-and-pencil tests, oral tests, performance tests, check sheets and inventories, score cards, rating scales, behavior records, and observations.

A variety of teaching aids are needed for effective teaching. Such aids include transparency masters, audiovisuals, bulletin boards, games, resource kits, etc. The more approaches a teacher uses, the greater the chances all types of students will learn successfully.

Suggested Reading

Ahmann, J. Stanley, and Glock, Marrin D. *Evaluating Pupil Growth.* 5th ed. Boston: Allyn and Bacon, Inc., 1975.

Chamberlain, Valerie M., and Kelly, Joan. *Creative Home Economics Instruction.* New York: Webster Division, McGraw-Hill Book Company, 1975.

Cross, Aleene. *Home Economics Evaluation.* Columbus, Ohio: Charles G. Merrill Publishing Company, 1973.

Cross, Aleene A., ed. *Vocational Instruction.* Arlington, Virginia: The American Vocational Association, Inc., 1979.

Finch, Curtis R., and Crunkilton, John R. *Curriculum Development in Vocational and Technical Education: Planning, Content, and Implementation.* Boston: Allyn and Bacon, Inc., 1979.

TEACHING HANDICAPPED AND DISADVANTAGED STUDENTS

During the 1970's a dramatic civil rights movement for the handicapped and disadvantaged developed. In 1976, the Vocational Education Amendments placed greater emphasis than ever before on ensuring the right of persons with special needs to a free and equal education. The amendments require that a portion of the basic state grant funds be used for the handicapped and disadvantaged. These set-asides are intended to provide the additional educational services which handicapped and disadvantaged students may require. These students are often referred to as "learners with special needs."

The phrase "learners with special needs" is used to describe students with different, unique, exceptional, or highly individualized wants or demands that must be satisfied for them to succeed. The phrase points out the necessity for finding a personal solution to each student's learning problems. Any student who has not been making normal progress and who appears to be heading for failure in school may be identified as a learner with special needs. Thus, special needs is an umbrella term used to describe all handicapped and disadvantaged students.

Specific legislation providing for their educational rights includes Section 504 of the Rehabilitation Act of 1973, signed in 1976, which established a mandate to end discrimination of the handicapped and to get them in the *mainstream* of American life. In the same year, Congress passed the Education of Handicapped Children Act. Together, these set forth a comprehensive scheme of federal civil rights legislation for handicapped persons.

The provisions of this legislation make it mandatory that vocational education provide a free and appropriate education to handicapped students in the "least restrictive environment." This term is interpreted in regulations stating that "each agency shall insure. . .to the maximun extent appropriate, that handicapped children. . .are educated with children who are not handicapped." Further, handicapped students are to be ensured an equal opportunity to participate in and benefit from programs and activities receiving federal assistance. In sum, the civil rights legislation affords handicapped students the same right to vocational education as nonhandicapped students.

Mainstreaming is a term which refers to the enrollment of identified special needs students in regular classes. Mainstreamed students are placed in the regular classroom with the provision of special education support services. The term is used to describe the process of equipping handicapped students for entry into the "mainstream" of society, as mandated in Public Law 94-142. The term also applies to the placement of disadvantaged students in regular classes.

Who Are the Handicapped?

A national profile by handicapping condition of students in vocational education mirrors the profile of handicapped students in special education. According to the Vocational Education Civil Rights Survey, slightly more than 36 percent of the handicapped persons enrolled in vocational education are mentally retarded, and 37 percent have a specific learning disability. The remaining 27 percent are identified by one of nine other handicapping condition. Of these, seven percent are seriously emotionally disturbed, two percent are orthopedically impaired, three percent are visually handicapped, and four percent are deaf or hard of hearing. Of the remaining group, ten percent is listed as "other health impaired," and five percent are multi-handicapped. (See Table 1.)

TABLE 1

HANDICAPPED POPULATION SERVED IN VOCATIONAL EDUCATION AND SPECIAL EDUCATION, BY HANDICAP[1]

	Percent of Handicapped Population Served in Special Education[2]	Percent of Handicapped Population Served in Vocational Education[3]
Mentally Retarded	21.8	36.5
Hard of Hearing	1.0	2.6
Deaf	1.0	0.9
Speech Impaired	29.4	2.7
Visually Handicapped	0.8	2.5
Emotionally Disturbed	8.2	7.3
Orthopedically Impaired	1.6	2.4
Learning Disabled	31.7	36.8
Deaf-Blind	0.0	0.2
Multi-Handicapped	1.5	4.6
Other Health Impaired	2.6	9.9

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[1] Charlotte A. Conaway. "Vocational Education Serves the Handicapped" *VocEd,* (April 1981), p.3.

[2] National Summary "State Agency Reports of Handicapped Children Receiving Special Education and Related Services," 1979-1980.

[3] Based on data from Vocational Education Civil Rights Survey-1980, Comprehensive High Schools and Area Vocational Centers (preliminary unedited survey data).

Mentally Retarded Students

Mentally retarded students function below average in the areas of intellectual, physical, and emotional development. Mentally retarded persons are capable of learning homemaking skills. However, as homemakers they will not have the constant supervision often given on the job. They must learn to make their own decisions and care for their own families as well as themselves if they are to live independently.

Characteristics of mentally handicapped students are listed below. The student:

- –may be of average physical size, but be uncoordinated and awkward
- –may have multiple handicaps
- –may perform poorly on intelligence tests, but may be "street-wise"
- –may function poorly in school and present behavior problems
- –may have short attention span, lack of concentration, learn at a slower rate, and have a lower capacity for learning
- –may be easily frustrated due to repeated failures
- –may have a lower resistance to disease and infection
- –may possess handicapping conditions varying from mild to severe or profound
- –can handle concrete learning more effectively than abstract
- –can learn to do skilled and unskilled work
- –can be employable.[4]

Emotionally Handicapped Students

The emotionally handicapped student's behavior may be unacceptable for the student's age level. The behavior may interfere with the student's own growth and development as well as with the well being of others. Some emotionally handicapped students' growth and development is affected by their withdrawal from the environment. Other students cause disruptions around them by constant conflict.

Characteristics of emotionally handicapped students are listed below. The student:

- –may not handle stress well
- –may demonstrate explosive behavior
- –may have a negative self-image and exhibit hostility
- –may have a short attention span and be difficult to motivate
- –may use demonstrative behavior (kick chairs, slam doors, use obscene language) or be extremely quiet and withdrawn
- –may be easily frustrated due to many years of failure
- –may need positive reinforcement
- –may function more effectively in a structured but flexible environment.[5]

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[4] Gloria E. Durr. and Camille G. Bell. *Mainstreaming Strategies in Home Economics.* (Lubbock, Texas: Home Economics Instructional Materials Center, Texas Tech University, 1980), pp. 6-7.

[5] Ibid., p. 7.

Learning Disabled Students

Students with learning disabilities are achieving less than their potential. They are normal in most respects, but have definite disabilities in one or more areas of development. Often their disabilities involve comprehension or the use of language. As a result, these students may exhibit difficulties in spelling, writing, and calculating.

Characteristics of learning disabled students are listed below. The student:

- —may be behind in grade classification and reading ability
- —may appear to be highly active, impulsive, restless
- —may be uninhibited in speech and disorganized in thoughts and actions
- —may exhibit frequent and sudden changes from explosive to docile behavior
- —may display distracting or disruptive behavior to gain attention
- —may have short attention span and be difficult to motivate.[6]

Deaf and Hard-of-Hearing Students

Because hearing loss is not as obvious as other disabilities, it is sometimes referred to as the "hidden handicap." Even a mild hearing loss interferes with learning and communication. Because it is not obvious, the symptoms of a mild hearing loss are easily misinterpreted as behavior problems. Students with mild to moderate hearing loss need to be encouraged to use residual hearing.

Students whose hearing is so impaired that they have problems understanding auditory information with or without a hearing aid or device are considered deaf. Without the ability to receive auditory communication deaf persons must rely upon their eyes for signals which represent ideas. The greater the hearing loss, the more the individual must depend on visual cues. Students with hearing losses might rely on an alternate communication systems, such as lip reading, sign language, or written language.

Speech Impaired Students

Speech problems may include articulation problems, stuttering, impaired hearing, cleft palate, cerebral palsy, or voice. Some speech disorders, such as stuttering, occur in isolation. Other speech disorders are associated with handicaps such as deafness, mental retardation, or cerebral palsy. Speech is generally considered impaired when it "deviates so far from the speech of others that it calls attention to itself, interferes with communication, or causes the individual to be self-conscious and maladjusted."[7]

Deaf persons experience varying degrees of speech impariment, but they can learn to talk. However, speech and language skills are difficult for deaf persons to develop. Early treatment and special training can enable persons with severe hearing impairments to learn sufficient language skills to communicate.

Speech is the communication tool most used in relating to others. For this reason, a speech handicap can be a social handicap. If others respond unfavorably to a speech handicap, the student may be inhibited or withdrawn into a world of silence. The result may be impaired social development and a poor self-image.

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[6] Ibid., p. 8.

[7] Ibid., p. 22.

Blind and Visually Impaired Students

The visually impaired student may have a vision loss ranging from slight impairment to complete loss of sight. The extent of the individual's handicap is influenced by the age of onset of visual loss, degree of loss, and cause of impairment.

Persons are considered *visually handicapped* if they see no better from 20 feet what persons with normal vision see from 70 feet. The visually handicapped required special aids or devices to read standard printed material. A person is designated legally blind when with the best correction, the person can see less from 20 feet than a person with normal vision can see from 200 feet, or when the field of vision is limited to a narrow angle of less than 20 degrees. Most blind students have some useable vision, but have problems such as cloudy, blurred, or double vision; spots; loss of side vision; or loss of central vision.

The social skills of a visually impaired student are often affected by the restricted ability to get around in the environment. In addition, emotional problems may develop as a result of negative attitudes of others.

Physically Handicapped Students

The physically handicapped student has some degree of health or physical impairment that limits actions or mobility. Physically handicapped students have a special condition which may be caused by disease, may have existed at birth, or may be the result of amputation. The range of physical disabilities includes orthopedic impairments, neurological impairments, and other health impairments. Orthopedic impairments include paraplegia, quadriplegia, and amputations. Students may be missing limbs or portions of limbs which restrict mobility. Crutches, wheelchairs, and other essential equipment call attention to these disabilities for many orthopedically handicapped students. These students often encounter public reactions such as embarrassment, staring, or avoidance.

Neurological impairments include cerebral palsy and epilepsy. Other health impairments range from diabetes and nephrosis to osteomyelitis. These physical impairments vary by the degree of the handicap, the stability of the condition, and the length of time the individual has had the condition.

Physically handicapped persons are very conscious of their movement restrictions. Their frustration may be expressed in inappropriate social behavior. Such frustration may cause the individual to become verbally aggressive, blame other people, repress desires, withdraw into fantasy, degrade the original goal, act less mature, and compensate for the disability by shifting to different interests. These possibilities emphasize the impact the reactions of family, peers, and the public, as well as the student's own perception of the handicap, have on the student's progress, attitude, and success.

Health Impaired Students

Students with severe or chronic health problems, such as epilepsy, cerebral palsy, amputation, hemophilia, spina bifida, cystic fibrosis or diabetes, are classified as *health impaired*. Many of these students have trouble keeping their bodies functioning normally.

The extent of health impairment can vary greatly. Mild conditions may not be readily apparent. Moderate conditions may be very evident to the teacher. Students born with a health impairment are more likely to have made satisfactory adjustments to it. More recently handicapped students usually have a more normally developed set of experiences and abilities. Researching the student's potential is vital to understanding the student's capabilities.

1

Multi-Handicapped Students

A multi-handicapped student has a combination of two or more handicaps. Knowledge of each handicapping condition is essential in working with the student. Observation and study are necessary to understand the extent of the student's abilities and limitations.

Teaching Strategies for Handicapped Learners

Making the transition from school to adulthood is a giant step for most young men and women, but especially for those who are handicapped or disadvantaged. Consumer and homemaking education has a major role in teaching handicapped and disadvantaged youth homemaking skills which will help them take that giant step. The teaching strategies suggested here have been synthesized from literature on teaching the handicapped and disadvantaged student.

In order to live independently, they need the same homemaking skills as other students. Consumer and homemaking education teachers face the challenge of teaching handicapped and disadvantaged persons effectively, of providing adequate support services, of expecting an equal level of skill acquisition by all students, and of ensuring that skills taught are adapted for each special needs student's most efficient learning.

Home economics teachers need to recognize that many of their special needs students have not spontaneously picked up the homemaking skills their other students have picked up at home. Therefore, the teacher's impact on these students can be potentially greater and far more important than the impact on the normal individuals. The homemaking teacher's impact on normal individuals may be the difference between being an average homemaker or a good homemaker. With special needs students, the difference may be between being able to live independently and being partially or totally dependent on others. Teachers also need to recognize that most special needs individuals in their classes are capable of learning anything taught in those classes. But how they learn and how long it takes to learn are quite varied.

Henry Viscardi at the White House Conference for Handicapped Individuals in 1977 said that the most difficult barriers for handicapped people are "not narrow doors and rigid curbs, but narrow minds and rigid stereotypes." The same is true of the disadvantaged. When mainstreamed students are enrolled in classes, teachers must reconstruct their mind-sets so that psychological barriers can disappear.

Often the teacher's first exposure to special needs students is the day such a student enters the classroom. This lack of experience often causes teachers to feel uncomfortable and unprepared. The teacher must first accept the reality of the handicap before being able to see all the things the student is capable of as a person. This initial attitude of acceptance is crucial and is one of the important variables for the success of the special needs student.

Next the teacher must make an effort to learn about some of the aspects and the nature of the student's handicaps or disadvantages. The teacher can become knowledgable about specific needs and problems through access to the student's file and through communication with the special education teacher, the counselor, and the student. Only if the teacher feels confident in knowledge of the student's needs can the teacher be successful.

Lesson Planning

The first step in lesson planning is to identify the basic content and skills which are the same for *all* students. The teacher who has clearly identified what is to be learned, why it is to be learned, and ways and means to measure whether it has been learned, can focus greater attention on how it can be learned. By varying teaching styles and individualizing learning activities, the home economics teacher can provide for all students without labeling special needs students and making them conspicious within the group.

To be successful in teaching special needs students, the methods must be individualized. Planning activities with special needs in mind is essential. The very nature and variety of handicapping conditions indicates that there is no one method or technique that will always fit a certain handicap or that will fit all handicaps. Persons with the same handicap or disadvantage will vary in their response to it. Thus, each unit of instruction must be "tailor-made" for each special needs student in the class.

One solution to the challenges posed by a class of students with varying abilities is to group students by ability level for some activities. This allows the teacher to plan activities which fit the learning styles and needs of each group. It gives the average student a chance to cover more content and to work toward higher levels of learning. It also gives other students, such as the educationally disadvantaged or the mentally retarded, an opportunity for more teacher-student contact, extra time to cover content, and a chance for repetition and drill if needed. Class time can be divided into

1) large group discussion and teacher-directed activities, and/or
2) small group activities specially designed to meet each group's needs.

Small group activities could be designed to suit the audio learner, the visual learner, and the kinesthetic learner. Objectives and evaluation methods may be the same or different, but time spent in groups can be the same. The teacher can rotate among groups, or spend time directing the activities of one or more groups.

Some teachers make effective use of learning centers. Use of varied teaching methods and materials provides students with opportunities to grow at their own levels of conceptual development. This contributes to their sense of achievement. Peer tutoring works well in learning centers. Through participation in the activities of the center, special needs students have opportunities to interact with their peers and to experience success. Through tutoring they may experience a one-to-one learning situation which can be of value to the tutor as well as to the special needs student.

Special needs students should be evaluated, when possible, by methods that require a minimum of reading and writing. Students with learning difficulties can be asked to explain or to demonstrate in some way the concepts they have learned.

To evaluate fairly *all* students in the class, the following procedure is useful:

1) Determine the objectives to be achieved.
2) Determine entry-level behaviors by pre-test or other means.
3) Monitor and record progress toward achievement of objectives.
4) Measure achievement of objectives.
5) Translate progress toward achievement of objectives into the school's marking system.

Grading students in reference to a criterion reduces the frustration students feel when they are compared with each other.

1) Establish reasonable rules for the conduct of all students and be consistent in your expectations for student behavior.

2) Avoid being overprotective or overcompensating toward handicapped students by encouraging all students to be independent.

3) Provide handicapped students with space and time needed to complete tasks and avoid completing tasks yourself or allowing other students to complete them.

4) When appropriate, help students to learn to manage time and develop compensatory techniques to increase speed and ability and to help them keep pace with classmates.

Strategies for Mentally Handicapped Students

When teaching a skill to the mentally retarded, keep the following points in mind:

1) Break the skill down into simple sequential steps that can be repeated until the whole skill is learned.
2) Provide stimuli in a number of ways, through learning, seeing, and touching, all of which reinforce learning.
3) If a poor memory slows learning, review instructions frequently.

Since constant reinforcement is essential for mentally retarded students, demonstration is an excellent teaching technique. But demonstrations may need to be repeated several times. Establishing a set routine for activities, like preparation and cleanup in foods lab, helps retarded students learn what is expected of them.

Because mentally retarded students have short attention spans, lessons should be short and concise. When work is assigned, the amount should be limited. Before beginning a learning experience, review the previous information and materials on which it is based. Lessons should be planned so that repetition of tasks is possible. In presenting information on giving directions, use as few words as possible and only those that are familiar to the mentally retarded student.

Strategies for Learning Disabled Students

The learning disabled student is not mentally retarded, but uneven in development. The student's weaker areas can be evened out with step-by-step, structured teaching. Such teaching uses more than one sense—tactile, visual, kinesthetic and auditory techniques. This method of learning from all angles is effective for most students, but especially for learning disabled students.

Adaptations for learning disabled students must be designed to fit each student's learning style. Learning disabled students need extra help with such concepts as spatial orientation, reading, listening, writing, speaking, instructions, motor tasks, and tactile discrimination. Most learning activities can be designed to allow for these.

Social awareness of learning disabled students is often affected by their comprehension and perception problems. These problems often cause these students to fail to sense things that others would notice right away. Perceptual problems may result in incomplete information about others, such as failure to correctly interpret body language. The student may talk too much or laugh too loudly. The student may be unaware of irritating personal habits such as squirminess or excessive movement. The student may have a poor self-image but have no idea why others display dislike. Because the student does not catch on to jokes, he or she may become the butt of ridicule. On the other hand, the student may see something as amusing because the learning disability emphasizes the double meanings of some words. As activities are provided in a way that enables the learning disabled student to meet with success, some of these problems will fade into the background.

Strategies for Physically Handicapped Students

Various accommodations may be needed to make consumer and homemaking education classes accessible to physically handicapped students. Individual teachers can do a great deal to make their classes more accessible to physically handicapped students.

An *accommodation* (also called an adaptation) is a modification of a work place or the work itself which enables a physically handicapped student to perform. An accommodation can be as simple as wrapping a strip of foam around a pencil so that it is easier to grasp, or as complex as using an electronic arm to reach objects. The best solution to a student's individual problem is often the result of the teacher's and/or student's ingenuity.

By looking first for the simplest, most natural solution, simple, inexpensive accommodations are often found. Creative, step-by-step approaches to problem-solving yields solutions which are readily available, cost-effective, flexible, and attractive. However, solutions should be re-evaluated periodically to be sure they continue to meet the student's needs.

Changes in placement of furniture and materials or controls are often helpful for handicapped students. Modifications can mean changes in classroom and laboratory facilities, designing flexible work areas, or purchasing standard equipment with a view to special needs and adaptations. Some of these changes may be as simple as raising a work table so that a wheelchair can fit under it. Storage drawers and shelves can be labeled with Braille. Kitchen tools can be labeled by letter rather than color, so that a color-blind student can return tools to the correct storage area. When equipment is ordered for a new foods lab, a range which has burner and oven controls at the front will permit a student in a wheelchair to reach them.

Standard tools can be modified or assistive devices provided. Assistive devices use the principles of simple machines (lever, wheel, inclined plane) or mechanical power to aid or replace physical function. These devices can often be made from scrap materials or by using common equipment in new ways. Sometimes they can be borrowed from libraries, universities, or community health agencies. Assistive devices can also be purchased from rehabilitation supply catalogs. Some sales catalogs which do not specialize in rehabilitation contain gadgets useful to handicapped students.

Examples of these include a braille label maker, which can be used with a visually handicapped student to label containers; an elbow-length oven mitt to protect the arm of a student who does not sense heat; and a C-clamp which holds fabric to the table while the student who uses only one hand measures and cuts it. Complex devices such as splints, hearing aids, and vision aids must be fitted by qualified professionals. Training in their use may be necessary.

Different movements can often be used to perform a task which the handicapped student cannot do in the usual way. Special education consultants may suggest that one body part or sense can be substituted for another. The student may have good ideas for approaching usual tasks in more individual ways. For instance, if one hand is weak, the student may be able to hold a bowl between his or her knees while mixing with a spoon. The student with a vision problem may be able to tell the difference between similar substances like salt and sugar by smell or taste. A sewing machine foot pedal can be placed on the table and operated with the elbow if needed.

Sometimes the best approach is to restructure the job for a handicapped student, much as rehabilitation counselors do in employment situations. Making an accommodation in job structure or design usually involves changing work schedules or job descriptions. For example, the student might need to send laundry out instead of doing it at home, to learn simple ways to garnish a purchased cake to save energy, or to select self-help clothes for a child.

Whatever the solutions, the teacher needs to observe carefully and consistently to make sure that the student's needs are reflected.

Who Are the Disadvantaged?

The terms *disadvantaged, special needs,* and *special populations* are used interchangeably to refer to minority groups such as Blacks, Asian Americans, American Indians, and Hispanics, especially those at poverty or low-income levels. All culturally different minorities are not disadvantaged. Some members of the majority culture are disadvantaged. However, cultural minorities have often been denied advantages enjoyed by the majority culture in the United States. The 1968 Vocational Education Amendments define the disadvantaged as "persons who have academic, socioeconomic, or other handicaps that prevent them from succeeding in the regular vocational program." Their education requires more extensive services. Without these services, disadvantaged students may become dropouts. The 1976 Amendments attacked this problem by setting aside a portion of federal vocational funds to pay for the extra costs of moving disadvantaged students into the mainstream of vocational education. In 1978, according to USDE figures, vocational education served approximately two million disadvantaged students. Consumer and Homemaking Education teachers are in a unique position to help these students prepare for life in the larger society, while developing respect for the unique cultural differences represented in the classroom.

Characteristics of Disadvantaged Students

Characteristics of disadvantaged students are listed below. The student:

- –may be a poor achiever
- –may live in a low-income family
- –may lack language skills because of poor language development and inability to speak standard English
- –may read at the fourth to sixth grade level
- –may have an acquired dislike of school
- –may pose discipline and attendance problems
- –may have a poor self-concept
- –may lack social skills for group participation
- –may tend to be aggressive
- –may have values and attitudes which are representative of a particular culture and of lower socioeconomic group

–may fear failure because of previous experiences in school
–may be slow in the performance of intellectual tasks
–may have poor work habits
–may tend to give up on tasks which provide no immediate sense of accomplishment
–may have a short attention span.

In summary, disadvantaged students suffer from rejection in society as well as in school. They often believe that the dominant group is responsible for their past and present segregation, limitations, and restrictions. They are aware and resentful that society has not offered them equal opportunities. They know that there has been serious interference with the exercise of the human and civil rights to which they are entitled. The consumer and homemaking education teacher must recognize the reality of these experiences and make every effort to assure that the students are welcome in the program and that everything possible is being done to make sure they learn.

Challenges to Teachers of the Disadvantaged

One of the greatest challenges facing the teacher of minority students is one of developing a positive and supportive attitude. Attitude is extremely important because it determines how the teacher treats the students. The teacher's treatment affects the student's attitudes toward school and ultimately the student's performance and success. Negative attitudes often stem from false stereotypes. Such stereotypes may result from often repeated generalizations about a cultural group and be supported by stereotypic stories and jokes. As a result of negative attitudes the teacher may convey to the student feelings that the student cannot succeed. Accordingly, the student fails. If, however, the teacher becomes familiar with cultural backgrounds and accepts students as individuals, the old stereotypes will seem less and less appropriate and the teacher's attitudes will become more and more positive.

Negative attitudes toward minority students are to a large extent the result of lack of knowledge about their cultures. Much emphasis has been placed on the problems these students have. However, teachers need to be aware that these students have strengths as well. These strengths often include acceptance of responsibility at an early age, ability to learn through concrete experiences, adherence to family and group rather than individual values, and good physical coordination and visual orientation.

Teachers are often apprehensive about teaching minority students. They may associate these students with a lack of success and unpleasant experiences. They may have been unsuccessful in previous attempts to teach minority students. They may feel unable to deal with problems often associated with minority students such as poor health, drug and alcohol problems, and poor housing and home conditions. To alleviate these fears the teacher should learn about the support services available in the school and community which can assist in dealing with these problems.

Teachers often feel uncomfortable communicating with minority students because they are not familiar with the students' language. When the language is a foreign one, the teacher can improve communications with students by learning the language. When the barrier to communication is nonstandard English, the teacher may have to learn from the students. Ability to communicate with students is extremely important since language plays such an important role in the student's life. If the student's language is rejected, the student may feel rejected and become less able to learn.

Another cause of difficulties in working with minority students is low expectations. Research shows that student learning is positively correlated with teacher expectations. However, it is not unusual for teachers to expect less of minority students than they do of other students.

Teaching Strategies for Disadvantaged Students

Social, cultural, and economic deprivation affect learning. Deficiencies in language and reading skills are especially evident among the disadvantaged. In addition, disadvantaged students may not have been exposed to many concepts which are familiar to other students. For example, table setting might be very familiar to the middle-class student, but to students living in families without enough pieces of flatware to go around, it may be quite unfamiliar. In addition, factors that motivate the disadvantaged to learn may differ radically from those that motivate the middle-class person. Middle-class students may be motivated by grades, a diploma, or learning for the sake of learning; disadvantaged learners may need something more tangible and immediate to motivate them to learn, such as being able to see how they can use the information *now.* Bilingual teaching may facilitate learning for some students.

All students have a need to be successful. Failure deprives them of the satisfaction of that need. Some students who fail fight back aggressively. Others withdraw, stop trying, and become non-learners. Some get physically sick. Many drop out. To prevent these outcomes, the teacher must provide opportunities for success. The student then needs praise. Success on a small scale and praise will motivate the student to greater success in the future.

Suggested instructional strategies are as follows:

1. Reflect the cultural backgrounds of students in the classroom. Provide role models with which ethnic minorities can identify. Select textbooks and teaching aids which are multicultural. Invite guest speakers from the minorities represented in the class. Use pictures of persons from various cultural backgrounds on bulletin boards. Include ethnic foods, clothing, family patterns, child rearing practices, architectural styles, consumer problems, etc. in planning instruction.
2. Use instructional materials and methods which promote cultural understanding. If materials available do not promote cultural understanding, seek supplementary materials which do.
3. Help disadvantaged students learn by simplifying difficult tasks and presenting them in ways that will make them easier to grasp.
4. Adjust your teaching style to fit the learning styles of your students. Make sure also that the material taught is relevant to the student's life and needs. The teacher must understand the community and the disadvantaged within it. Relate instruction to the student's direct experience whenever possible.
5. Make an effort to involve all students in learning activities. Take advantage of student-initiated ideas to increase participation and interest.
6. Involve parents of minority students. This will require encouragement and interesting activities. Most of all, it will require a teacher who is an energetic organizer and who can get along with people. The effort to involve parents will pay dividends in increased student interest and increased parental support.
7. Help students to learn to evaluate themselves and assess their own progress. Evaluate students' efforts promptly, provide feedback, help students learn from their mistakes, and show them where and how they can improve.
8. Be honest with minority students. Don't give a rosy appraisal of problems. Honesty is an important way to establish rapport and develop the respect of these students.
9. Make instructions practical and basic. Explain *how* first; *why* later. Minority students are often said to learn best by doing; however, many educators believe this is equally true for all students.

10. Reward success. Since failure has been a common experience for many minority students, each success should be rewarded. It may be necessary to reward small steps to ensure that the student will eventually reach the objective or achieve the competency. Consumer and homemaking education classes provide many opportunities for producing tangible products which provide evidence of achievement. Students can see that they have baked a tasty bread, drawn a neat floor plan, made an attractive garment, planned an effective budget, or created an exciting toy. Consumer and homemaking education courses also make students feel self-sufficient, an attitude needed to function as an adult.

FHA/HERO For Special Needs Students

FHA/HERO (Future Homemakers of America/Home Economics Related Occupations) provides special needs students experiences they need to develop their full potential for living satisfying lives. These experiences benefit special needs students in several ways:

1. The experiences contribute to the student's sense of accomplishment and pride.
2. The activities of the organization provide students an opportunity to learn to work together.
3. Organization activities give the students the opportunity to learn from the teacher on an informal basis.
4. The organization provides recreational and social activities that help students develop wholesome relationships with others and desirable social skills.
5. Adult sponsors can set an example which helps students develop their own moral and ethical standards.
6. Participation in the organization helps students learn democratic principles.
7. Students learn to carry through on their own ideas and plans.

Through these experiences FHA/HERO can help the special needs student develop a sense of identity, a positive self-concept, independence, self-control, healthy relationships with others, moral and ethical values, and democratic and citizenship skills.

Special needs students often fail to pursue membership in youth organizations. These students may feel membership is too expensive or too exclusive. Membership may require more commitment than the student is willing to make. Several adaptations can enable FHA/HERO to develop the potential and talent of special needs students. These adaptations should enable the special needs student to try out ideas, to find someone who will listen, to permit mistakes without penalty, to build on successes, and to develop self-confidence.

Students should be made aware that the student organization is an important part of the Consumer and Homemaking Education program. A variety of techniques can be used to motivate students to participate:

1. Convey your own positive attitudes toward the organization to students.
2. Spend time in class describing the organization, utilizing slides, films, brochures, or speakers to motivate students to participate.
3. Inform parents of the purposes and value of the organization.
4. Utilize interested students in motivating other students to participate.
5. Give students the opportunity to participate in the organization's activities as quickly as possible.

Supervising Activities of the Vocational Youth Organization

To ensure continued participation, the teacher must integrate the activities and principles of the student vocational organization into everyday classroom and laboratory experiences. This helps students realize the value of the organization. Operating the organization as a part of the curriculum allows chapter information to become a part of classroom activities. Such an approach increases the frequency of communication about chapter activities and helps to maintain a high level of interest. It also helps students to see the relationship between FHA/HERO activities and their futures as wage earners, family members, and citizens.

Special needs students should be provided the same opportunities for personal growth and leadership development as other vocational students through participation in vocational youth organizations. Students need opportunities for leadership roles and active participation at all levels. Students should run for and hold offices. The chapter should have a full slate of officers and work through student committees to plan school and community activities. Students should be guided in learning the procedures of self-government through actual practice. They should have opportunities to participate in organization activities involving other chapters at local, area, state, and national levels.

Activities are appropriate for all FHA/HERO members for helping students develop the skills every young person must have to succeed in the world of work. Students can become involved in such activities as school-community projects, student recognition ceremonies, public relations, and competitive events. Activities of the organization provide excellent opportunities to increase public awareness of the potential of special needs students.

FHA/HERO can involve every special needs student through such activities as school-community projects and public relations. The teacher can encourage participation by providing motivation and rewards for efforts. Community activities might include school beautification projects, school bulletin boards, school stores, and lunchroom cleanups. Students can conduct anti-litter campaigns, organize walk-a-thons, talk-a-thons, and bike-a-thons, give assistance to projects organized by local civic clubs, or adopt grandparents in nursing homes. Club members can work at training centers for retarded children or adults and provide entertainment for those centers. The chapter could sponsor a radio show to publicize consumer and homemaking education. These activities can provide high visibility, bring instant recognition, and provide constant reinforcement to participants.

Participation in area and state FHA/HERO meetings can provide important new experiences for special needs students. These meetings may provide the student's first long trip away from home or the student's first view or a different geographical area. The cost of these meetings are within reach of all students or clubs. Sponsors can be found for those in severe need, or students can cooperate in fund-raising activities to finance their trips.

SEVENTH AND EIGHTH GRADE HOMEMAKING

SEVENTH AND EIGHTH GRADE
FOOD AND NUTRITION

COMPETENCY: *Ability to relate nutrition to self*

SUB-COMPETENCIES:

Analyze the effects of food on health and appearance.

Determine nutritional needs.

Determine ways to meet nutritional requirements.

Analyze the nutrient combinations of various foods.

Select nutritious snack foods.

Select nutritious breakfast foods.

Analyze own food habits.

Analyze various factors contributing to meal patterns and food habits.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
A. Nutrition and You 1. Food and nutrition in relation to health and appearance	List five things about your health and appearance with which you are pleased. List five things with which you are not pleased. Compile a class list for discussion. What things are likely to change with time? Examples: skin problems, underweight, too short. Reach a consensus in class on things that you can control with good nutrition. Examples: maintaining proper weight, maintaining good health, etc. Discuss characteristics you inherited from your parents. Can proper nutrition influence any hereditary characteristics? For example: potential for height is hereditary, but nutrition can determine whether you reach your potential height. Study references on average height and weight for your age group. Have girls anonymously record their height and weight on yellow strips of paper and boys record the same information on white slips of paper. Your teacher will anonymously total and average both heights and weights for males and females for the class. How does your class average compare with the national average? How does your individual height and weight compare with the national averages for height and weight? Draw a picture of someone who shows signs of good health. Draw another picture of the same person showing signs of poor health. Discuss differences in the appearance of healthy and unhealthy persons.

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

Analyze your attendance record for the last school year. Did you have more than three absences? More than five? More than 10? Compare the number of your health-related absences with the number of health-related absences of other class members. Were you ill more than the average number of days for the class? Less than the average number for the class? Does what you eat and when you eat affect your health? Are your eating habits reflected in any way in the number of times you were absent because you were ill?

View the transparency contrasting two "Nutrition News Articles." (See Transparency 1.) Identify the facts that are cited which make one article more reliable than the other.

Read a current magazine article related to nutrition and health. Give a brief report to the class. Be sure to note and report who wrote the article and what the person(s) background is (are). Discuss how to determine whether the information is reliable or not.

Define *nutrition* in your own words. Study selections on nutrition in available textbooks. Was your definition correct? Can you add new ideas from what you read?

Identify various ways individual nutritional requirements may be met. Examples: An active athlete may choose more high-calorie snacks than a less active person. An overweight person may need to choose only low-calorie snacks.

2. Junk food versus nutritious food selections

Define *junk food.* List foods that you and your friends eat for snacks. After reading references related to snack foods and nutrition, examine your list of snack foods and indicate those that are *junk* and those that are nutritious. How many foods that you listed were nutritious? How many were high-calorie, low-nutrition foods?

View a filmstrip on snacks. What foods frequently eaten as snacks contribute little to the diet except calories? What foods can be substituted for better nutrition?

Participate in small group discussions to identify snack foods that are nutritious as well as acceptable to the group. Compare your group's list to the other groups' lists. Did you think of any foods not included by the other groups? Did they make suggestions your group did not have? Make a master list.

Bring to class pictures of snack foods. Prepare a bulletin board and separate the junk food from the nutritious snack food.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Work in groups to develop lists of junk foods and nutritious foods. Compare with other groups in your class. Were there any differences of opinion regarding which foods were placed in each category?
	Invite a dentist or a dental hygienist to speak to the class about the effects of sugar on teeth. Discuss foods and drinks, such as soft drinks, that are high in calories because of a high amount of sugar.
	Interview a dermatologist to determine foods that may aggravate a skin eruption problem. [NOTE TO TEACHER: If a dermatologist is not available locally, interview another resource person such as a nurse or student nurse.] Discuss foods that are high in calories due to a high amount of fat.
	Invite a resource person to discuss with the class how nutrition relates to athletes, energy levels, and physical fitness.
	Construct a "Smart Selection Chart" of nutritious snack foods. List the calories contained in one serving of each food.
	Develop breakfast menus that are appealing and nutritious. Use foods not traditionally used for breakfast if they are more appealing to you. Examples: open-faced sandwich and tomato juice; beans, tortillas, and tomato wedges; or hamburger patty and fresh strawberry shortcake.
3. Food habits and customs	List your family's food habits. Include such things as when, where, and what foods your family eats. Why do you think these things become habits for your family? Share with the class.
	Read references to define the term *meal patterns.* Are meal patterns the same in all countries? Discuss whether meal patterns are determined by habit, custom, or culture.
	Interview a foreign exchange student or a student who has lived in a foreign country. Ask the student to describe the food patterns common to that culture. How do they differ from our culture's food patterns? Describe ways a country's culture may affect the food eaten.
	Invite a panel of community religious leaders to explain the role of food in religious rituals, ceremonies, and holidays. [NOTE TO TEACHER: Include Passover, Easter, Christmas, communion. funerals, weddings, bar mitzvahs, etc.]

CONCEPTS LEARNING AND EVALUATION EXPERIENCES

Plan a Food Fair during school hours or as an outside activity. Prepare dishes from other countries or invite community members familiar with foods from other countries to prepare dishes. Invite parents, faculty, and friends to sample the foods. [NOTE TO TEACHER: This makes a good FHA activity.]

Discuss the ethnic backgrounds of students in your school. Find out the food preferences of the various groups represented. Have each student describe a favorite "ethnic" food that his/her family enjoys. In what country did the dish probably originate?

Prepare a bulletin board showing the United States divided into different regions. Examples: Northeast, South, Southwest, Central, West. Locate and clip magazine pictures that depict foods associated with the various regions. Attach the pictures to the map in their proper regions.

Brainstorm in small groups on how emotional needs can influence what we eat and when we eat. Discuss how satisfying emotional needs through eating may lead to problems with personality and appearance.

Discuss eating as a social event. List all the special times during the year when food is associated with a holiday or event. Which Amerian holiday is a celebration of plentiful food?

Examine *conditioning* related to what and when you eat. Do you eat when you watch TV? Do you eat when you read a book? Do you eat and read the newspaper? Can you watch TV, read a book, or read a newspaper without food? Can this type of conditioning lead to habits that may become problems later on?

List all the situations you can think of when food is used as a reward. What kinds of foods are used in this manner? Can you identify any potential problems from using food as a reward? Discuss how childhood "food rewards" may have influenced your eating habits. Will you offer "food rewards" when you have your own family? If so, how could you make your children's nutrition habits better than your nutrition habits?

View the transparency "Factors Influencing Food Habits and Customs." (See Transparency 2.) Identify the pictures depicting habits, customs, religion, culture, emotion, and conditioning. Do your classmates agree with your choices? Why or why not?

Compile a list of food fads and fallacies with which you are familiar. How can such information (true or not) influence people's eating habits.

COMPETENCIES:

Ability to plan nutritious meals and snacks

Ability to serve foods attractively

SUB-COMPETENCIES:

Outline the Daily Food Guide.

Analyze own food intake in relation to the Daily Food Guide.

Develop menus based on the Daily Food Guide.

Plan menus which include a variety of colors, shapes, textures, temperatures, flavors, and aromas.

Plan menus which can be prepared in the time available.

Serve foods in an attractive manner.

Use appropriate etiquette when dining out.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
B. Simple Meals and Snacks 1. Daily food guide	Study references about the Daily Food Guide and the recommended allowances in each food group. Identify serving sizes of foods in each group. Practice classifying various foods into the five groups. What nutrients are provided by each food group? Why is each nutrient needed by the body? Plan a menu for a simple meal that includes food from each food group.
	Cut out pictures of foods. Explain the nutritive value of each food and place each picture in the correct group on the bulletin board.
	Interview several persons to find out why they do or do not eat breakfast. How difficult is it to meet a day's nutritional requirements in just two meals a day? How may skipping breakfast affect the way you feel?
	Develop posters to display in the school to advertise the importance of a good breakfast. [NOTE TO TEACHER: This activity might be done as an FHA/HERO project.]
	Use the Daily Food Guide as a reference to evaluate the nutritional adequacy of some sample menus. Do the menus provide from one-third to one-half of the daily food requirements? Suggest ways to improve the menus that do not meet the adequacy requirements.
	List all foods (including soft drinks and snacks) that you have eaten in the last 24 hours. Compare the foods you have eaten with the recommended amounts for each food group. Did the foods you eat include all of the food groups? Which group, if any, was not included? Did you eat enough servings in each food group? Did you eat more than the recommended amount for any group? How many

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	foods did you eat from the fats, sweets, and alcohol group? What foods could you add to make a more balanced diet for the day? Keep a food diary for one week. Be sure you include everything you eat and drink. Evaluate your week's record according to the Daily Food Guide. Are you getting the nutritious food you need? How can you improve your diet? Write down your evaluation and recommendations for improvement. Write menus for two breakfasts based on the Daily Food Guide. Plan one breakfast using traditional breakfast foods. Plan the other using nontraditional breakfast foods. Which breakfast would you prefer? As long as it is nutritious, is there any reason why breakfast has to include only traditional foods? Write menus for three meals and snacks for one day for a teenager. Exchange menus with another student. Check menus against the Daily Food Guide to be sure the menus meet daily nutritional requirements.
2. Appearance	Discuss how the appearance of food can enhance its acceptance. Would you enjoy eating food which was colored unnaturally? Examples: blue mashed potatoes, green biscuits, purple margarine, etc. Would the food taste any different? Develop a menu of foods that are all the same color. Use food pictures or models to show your menu. Exchange with another class member and redo the menus for better variety in color. Contrast the foods in the revised menus with the foods in the first menus. Repeat this exercise using foods of the same and different shapes. Read references regarding food textures. Is any food unappealing to you because of its texture? Is a food's texture always the same, or does it vary with the method of preparation? Pretend you are serving the following foods at a dinner: tiny meatballs, small new potatoes, English peas, and melon balls. How could you improve this menu by choosing foods with different shapes? Develop a breakfast menu which includes foods of varying temperatures and varying colors and shapes. Share your menu with the class and see if the class members can offer suggestions for improvement.

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Examine menus from restaurants in your area to see if the meals offer a variety of color, shape, texture, and temperature. How could the menus be improved?

List foods strong in flavor and aroma. Brainstorm in small groups to determine foods that would complement those on your lists.

Plan a menu for a simple meal that would include a variety of colors, shapes, textures, temperatures, flavors, and aromas. Make sure your menu is nutritionally adequate.

3. Time required for preparation

Interview two or three people responsible for preparing meals for families. Ask them what they prepare when they have only 30 minutes. Do these people work outside the home? Are meal preparation responsibilities shared?

View a filmstrip on quick food preparation tips for family meals. What factors influence the time and energy required to prepare a meal? How can changes in menu, food form, equipment, etc., affect the time required for meal preparation?

List some time-saving equipment for preparing meals. Examples: microwave ovens, pressure pans, aluminum baking nails, food processor. Demonstrate the uses of time-saving equipment in preparing family meals quickly.

Determine how much time would be required to prepare the menu you planned for a meal. Check in recipe books to find out how long each food takes to prepare and cook. Which food would you prepare first? Which food could be prepared last? What does the term *dovetailing* mean in relation to food preparation? Could you manage to get everything ready to serve at the same time? Could you save some time by making changes in the menu? How can use of partially or completely prepared convenience foods save time in food preparation? What are the disadvantages of using convenience foods?

Prepare and sample convenience foods vs. homemade versions of the same food. Evaluate and compare on the basis of cost, appearance, taste, time required for preparation, etc.

View the transparency "Food Preparation Schedule" which shows the development of a time plan for a specific menu. (See Transparency 3.) Discuss whether a time plan would be useful to you.

Practice making time schedules for several identified menus. Compare your schedule with those prepared by classmates. How could your time schedule be improved?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
4. Energy required for preparation	Make a list of ways to save energy (human and fuel) when preparing meals. Suggest menu items which would save each type of energy. Would some of the suggestions save one type of energy but use more of another? Do some of the suggestions save both types of energy at the same time?
	Plan a menu for a busy day which would save human energy. Plan a menu which would save fuel energy.
	Study cookbooks to find recipes which can be prepared more than one way. Example: Stew can be cooked in a slow cooker or a pressure pan, on top of the range, in a conventional oven or in a microwave oven. Invite a utility company representative to estimate which methods of cooking save fuel energy when preparing various foods.
5. Serving the food	View Transparency 4, "Basic Table Setting," which shows a place setting for a simple meal. Discuss where flatware is placed in relation to the plate, where the glassware is placed in relation to the flatware, etc. Study resources for more detailed information on the location of additional flatware and dinnerware when meals are more formal. Examples: bread plate, salad plate, butter knife, dessert spoon, soup spoon.
	Bring to class magazine pictures of informal table settings. Share with classmates your ideas on good and poor features of these settings.
	Discuss color and its impact on the table setting. Share ideas for some inexpensive centerpieces that utilize color effectively.
	Study references to determine basic informal mealtime procedures. Identify proper procedures for serving food, placing food on the table, passing food at the table, removing dishes, and serving dessert.
	Practice, using empty dishes, the manners for serving and eating a meal. In which direction are dishes of food passed? Explain the procedure for taking, serving, and passing a dish of food. Learn how to correctly remove dishes from the table before dessert is served?
	Work in small groups to design an attractive place setting for a tray using items available in the classroom. [NOTE TO TEACHER: These projects could be used for class competition among groups. Winners could be recognized with some small award or privilege.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Develop a menu for a simple meal which would look attractive served on the tray setting you designed. Consider the colors and shapes of the foods and whether they would complement the colors and shapes of the dinnerware. Examples: Beets might look unattractive on a red or purple plate; vanilla ice cream served in a white dish might be garnished with strawberries or chocolate sauce and nuts.
6. Etiquette for eating out	Discuss different types of food service establishments (including school cafeterias) in your area. How many different types have you eaten in? Do people dress and behave more formally in some eating places than in others? Why?
	Read references on etiquette related to eating out. Compile a class list of guidelines to follow on being seated, ordering, paying, and tipping.
	Study references to identify basic rules of table courtesy. Make a class list of rules you feel are most important.
	Brainstorm on why you think each rule of basic table etiquette is important. Consider how each rule contributes to mealtime efficiency or to the consideration of others.
	Write some brief skits contrasting proper restaurant behavior with "not-so-proper" behavior. Role play with skits for the class. [NOTE TO TEACHER: Assign three or four students per group to work on this activity. Each group could illustrate a different aspect of eating out.] Why is it important to practice good etiquette at home?
	Go out to eat with class or FHA club. Practice using good etiquette in the restaurant. Observe the behavior of other restaurant customers. What examples of good and poor etiquette did you observe? What questions did you have about etiquette during the meal?

COMPETENCY: *Ability to apply consumer skills to food buying*

SUB-COMPETENCIES:

Identify ingredients in processed foods from label information.

Determine nutrient values of processed foods from label information.

Compare processed foods using label information.

Use consumer resources to compare processed foods.

Use food advertisements in planning food purchases.

Compare unit costs when shopping for food.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
C. Consumer Skills 1. Reading labels for information	Participate in a scavenger hunt for labels from food products in each food group or draw several empty food containers from a sack. Separate the labels or containers into food groups. Study the labels to determine the kinds of information included. Decide what information is descriptive and what is required by law. Study references on labeling laws and requirements. Make a list of information required on food labels. View the transparency "Food Labels." (See Transparency 5.) Identify and locate food labeling information. Study labels which list ingredients. Note that ingredients are listed in descending order by weight. Example: "water, sugar, flavoring" means that there is more water in the product than sugar or flavoring and that there is more sugar than flavoring. Discuss how this information may be of value to the consumer. Test your understanding of food labels by answering questions about the labels on food containers located at various stations around the room. [NOTE TO TEACHER: This activity could be used as part or all of a test on food labels.] Bring to class empty breakfast cereal boxes. Choose six different ones, including two or three which make nutritional claims. Construct a nutrition chart using the information from the six boxes. Are the cereals almost the same nutritionally? Do the ones making nutritional claims contain more nutritious ingredients than those that do not make nutritional claims? Do any of the cereals contain more nutrients than necessary? Read a consumer magazine article which compares different brands of a food product. What points were compared? How were the brands similar? How were they different? Which brands rated highest? Why?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Getting your money's worth of nutrition	Read newspaper grocery advertisements and compare prices of nutritious snack foods. Include foods such as cheese, fresh fruits and vegetables, dried fruits, peanut butter, etc. Figure the cost per serving and determine the most economical snack(s). Visit a grocery store and count the kinds of cereals on the shelf. How many are presweetened? How many are unsweetened? Compare the price per ounce of one of the sweetened cereals to the price of one of the unsweetened cereals. Which is the better buy? [NOTE TO TEACHER: If it is not practical for all students to visit a store, make this an individual assignment or a small group assignment to be completed outside class time. Other students could be assigned on a rotation basis for other research projects later in the year.] Prepare one ounce of ready-to-eat cereal, regular cooked cereal, and instant cooked cereal (all from the same grain) for the class. Compare the cost per serving, the time required to prepare the serving, the flavor, the texture, and the nutritive value. Which is the best buy? Which was prefered in the class taste test? [NOTE TO TEACHER: This activity also works well using various forms of rice or potatoes.] Study the grocery ads again to find the lowest cost protein food for a sandwich. Figure the cost per serving from the sale price of foods such as luncheon meats, peanut butter, hamburger meat, and canned tuna.

COMPETENCY: *Ability to utilize basic kitchen skills in food preparation*

SUB-COMPETENCIES:

Maintain acceptable standards for personal cleanliness.

Utilize sanitary food handling practices.

Observe safety practices in the kitchen.

Follow appropriate procedures for kitchen emergencies.

Demonstrate proper use and care of kitchen equipment.

Adapt kitchen equipment to accommodate personal physical handicaps.

Explain food preparation terms and methods used in recipes.

Interpret abbreviations used in recipes.

Utilize equivalent measures as needed during food preparation.

Substitute appropriate ingredients for recipe ingredients.

Utilize appropriate equipment and techniques for measuring ingredients.

CONCEPTS

D. Basic Kitchen Skills
   1. Practicing sanitation and safety

LEARNING AND EVALUATION EXPERIENCES

Work in groups to list standards for personal cleanliness for work in kitchens. Examples: Wash hands thoroughly before handling food; do not touch or comb hair while working in kitchen; do not taste foods with fingers or utensils used in food preparation. Share your completed list of standards with the class.

View the transparency "Hand Sanitation." (See Transparency 6.) Discuss the importance of clean hands when handling food. Can you think of other examples that would necessitate washing hands?

Role play skits illustrating correct and incorrect procedures for personal cleanliness in the kitchen. What can be done to improve the incorrect procedures?

Participate in a "Sanitation Bee" by dividing the class into two teams. Each team takes a turn giving a sanitation rule. Players who cannot give a rule sit down. No rule can be repeated. The team with the last person standing wins. Examples: Dishwater should be warm soapy, and clean; use hot water to rinse dishes; handle only the parts of the dishes and utensils that will not be placed in the mouth.

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

View the transparency "Handling Clean Dishes." (See Transparency 7.) Discuss what makes some examples incorrect. The next time you eat out, observe the handling of the dishes. Look for examples of correct and incorrect handling.

Discuss reasons for sanitary practices in handling food. Explain ways sanitation involves more than personal cleanliness. Consider cleanliness of utensils, equipment, floors, work surfaces, and food.

Listen to a resource person from a restaurant or health department present reasons for sanitary practices in handling food, or view health department films on sanitary food handling. How and by whom is sanitation in restaurants checked in your state? What are the penalties for failure to maintain sanitary standards?

Visit a school cafeteria and observe the procedures followed to achieve sanitation in the kitchen.

Watch the school nurse demonstrate simple first aid methods for cuts, burns, and falls. [NOTE TO TEACHER: The Heimlich Maneuver for victims of choking could also be demonstrated.]

View the transparency on "Safety Hazards in the Kitchen." (See Transparency 8.) Conduct class competition to see who can identify the most safety hazards in five minutes.

Play a home safety game called "Home-Safe Baseball." The game has four question pockets ranging in difficulty from one to four. The difficulty of the question indicates how many bases a player moves if a question from that pocket is answered correctly. Use Velcro to attach felt baseballs representing players to the gameboard. Divide into two teams with one player at a time coming to "bat." "Hits" are scored when a player answers one of the questions; that player's felt baseball is moved to the appropriate place on the gameboard. A player "strikes out" when a question is missed. The team with the most points at the end of the game wins.

Conduct a safety check of your kitchen at home. Identify and correct any hazards found. Share the information with classmates.

Develop a list of emergency phone numbers to keep beside your home telephone. Include numbers for the poison control center, fire department, police, physician, and any other numbers that your family might need in an emergency.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Using equipment efficiently	Watch a utility company home economist demonstrate use and care of large equipment, including ranges and refrigerators. What energy-saving features have been added to large kitchen equipment in recent years? How can consumers save energy by using this equipment?
	Study references on use and care of major appliances. Read manufacturer's use and care booklets. Look for information on the amount of energy used and on energy-saving features.
	Examine a kitchen in the foods laboratory. Identify kinds of utensils and where each kind is stored. Identify types of cookware and where each type is stored.
	Discuss the different utensils and their uses. Work in small groups to give demonstrations for the rest of the class on the use of one or two utensils.
	Study references on cookware. Identify and locate saucepans, double boilers, cake pans, cookie sheets, roasting pans, skillets, etc. What factors influence the energy efficiency of cookware?
	Discuss inexpensive adaptations of food preparation utensils and food storage areas to accommodate people with various kinds of physical handicaps. Examples: Cut a hole in a pull-out drawer or breadboard so that a mixing bowl can be inserted for steady mixing; tape handles to improve grip; store flour and sugar in small plastic bags in an easy-to-reach location.
3. Reading recipes	Select several different cookbooks from your library or laboratory. Look at the way recipes are written. Are they presented in a fairly consistent format? Generally recipes have two main parts. What are the two parts? Which part is given first? What other information do you need? Examples: number of servings, size of pan, temperature for cooking, length of time to cook.
	View transparency of "Sample Recipe." (See Transparency 9.) Identify the various parts of the recipe. Examples: ingredients, amounts, terms, method, abbreviations, number of servings, temperature required, etc.
	Study references to become familiar with cooking, mixing, and cutting terms and methods. Play "Cooking Charades" using as topics the cooking, mixing, and cutting terms and methods you have learned.
	Look up charts in reference and recipe books on abbreviations used in recipes. Read recipes in which abbreviations are used, and write out the correct interpretations.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Study metric abbreviations used in cooking. Practice using metrics by converting a recipe using standard measures to metric measures.
	Look at a food equivalent chart. Where can you find this kind of chart if you need it? Have you ever used any of these food equivalents?
	Locate and list equivalent measures. Study cookbooks to find tables or charts of equivalent measures. Identify the equivalents used most frequently in food preparation.
	Demonstrate your knowledge of equivalents by increasing and decreasing the ingredients of a particular recipe to achieve more servings and fewer servings. If the recipe serves four, increase it to serve eight. Decrease the same recipe to two servings. Check your results with those of classmates. Discuss any differences to clarify the use of equivalent measures.
	Interview homemakers to determine the usefulness of knowing food substitutions. What food substitutes do these homemakers use most frequently? How may the use of substitutions save time, energy, money? Summarize your findings and share with the class.
	Locate several food substitution tables in different sources. Compare the information. Are some tables more complete than others?
	Predict from your reading what the results might be if you made substitutions for nearly all the ingredients in a recipe.
4. Measuring ingredients a. Equipment for dry and liquid measures	View a transparency of "U.S. Standard Measurements." (See Transparency 10.) Look at the measuring cups and spoons in the foods laboratory. In what increments are they marked?
	Read references about measuring equipment. Why is it important to look for equipment marked "U.S. Standard"? Can you use a coffee cup and a flatware spoon for accurate measurements? Why or why not?
	Work in groups to develop a quiz game based on a current TV game show that can be played by the class to learn common measurements and measurement equivalents.
	Discuss ways to improvise measuring equipment. For example, use a marked peanut butter jar for a liquid measure. Try to think of other ways to improvise in situations where equipment may not be available, such as on camping trips.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
b. Methods of measuring ingredients	Watch a demonstration on correct procedures and equipment for measuring liquid ingredients. Why should liquid measuring cups have a rim above the measurement line? Why should they be transparent? Why should you set a liquid measuring cup level to read the measurement? Study references to learn techniques and proper equipment to use in measuring dry ingredients, such as flour, powdered sugar, granulated sugar, and brown sugar. Demonstrate for the class the correct technique for measuring one type of dry ingredient. How do the procedures for measuring dry, dry-sifted, and dry-packed ingredients differ? Weigh one cup of flour before sifting. Sift the flour and measure another cup. Weigh the sifted flour and compare the weights. Could the difference affect the results of a recipe? Observe a demonstration on methods used to measure solid ingredients such as shortening or margarine. What is different about measuring a cup of shortening or a cup of flour? Study references to determine correct measuring techniques for other ingredients such as eggs, coconut, nuts, bread crumbs, etc. Practice measuring different types of ingredients using the appropriate techniques.

COMPETENCY: *Ability to prepare a variety of foods*

SUB-COMPETENCIES:

Prepare nutritious snacks.

Prepare breakfast cereals.

Prepare quick breads.

Prepare beverages.

Prepare soups.

Select appropriate soups for intended use.

Prepare sandwiches.

Select appropriate sandwiches for intended use.

Prepare simple salads.

Select appropriate salads for intended use.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
E. Food Preparation 1. Nutritious snacks	Plan a class lab on nutritious snacks. Have each group prepare a different snack. Examples: fruits, nuts, cheeses, vegetables, cookies, cereal snacks. Select recipe(s). Prepare a market order and a time schedule. (If cookies are selected, they should be nutritious and quick to prepare.) [NOTE TO TEACHER: See "Bank-A-Budget" by Doris Karls and Elaine Jordan in *Illinois Teacher*, May/June 1978, pages 274-277, for a plan for involving students in laboratory food budgeting.]
	Report to the class on your group's snack preparation experience. Share ideas on how you could improve. Give information about the nutrition of the snack your group prepared.
	Taste test the snacks prepared by all the groups. Use a class-developed check list for evaluation. Present ribbons or small awards for the most attractive, the most nutritious, and the best tasting snacks.
2. Breakfast a. Cereals and quick breads	Study references about cereals and quick breads. Compile a list of terms related to the bread and cereal food group. Write definitions for those terms you understand, and look up definitions for terms you are not familiar with.
	Determine the nutritional contributions of quick breads and cereals. Prepare a chart detailing the major nutritional contributions for five quick breads and five cereals. Include the calorie content per serving for each item listed in the chart.
	Study the principles in preparing cereal products. Demonstrate to the class how to prepare a cooked cereal product. Suggest five or six ways to introduce variety by additional ingredients. Examples: cinnamon, honey, raisins, nuts, etc.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Study principles in preparing quick breads. Plan a lab where each group prepares a different quick bread product. Examples: biscuits, muffins, pancakes, banana nut bread, corn bread, waffles, etc. Share information about the preparation and characteristics of each quick bread. Evaluate your lab experiences and product.
	Prepare biscuits from a recipe, biscuits from a biscuit mix, and refrigerated canned biscuits. Compare the time required to make each product, the cost per serving for each product, and the taste of each. Which biscuit did most of the class prefer for taste? Was it the same biscuit as the lowest cost product. Which kind took the least amount of time? In what situations might each kind be a good choice? Which required the most energy (human and fuel) to prepare?
b. Beverages	Develop a set of flash cards with terms related to beverages and their preparation. On the back of each card write a definition of the term. Use the flash cards in small groups to become familiar with terms related to beverages.
	Discuss the nutrients in various beverages. Construct a bulletin board showing how beverages can help in meeting the daily nutritional requirements.
	Read references to determine the principles of preparation for beverages such as tea, coffee, cocoa, fruit juices, etc. Work in groups to prepare beverages in a variety of ways. For example, one group selecting iced tea might prepare iced tea using the steeping method and pouring over ice, using instant tea, and using the sun tea method. The resulting products can be compared as to time required for preparation, cost per serving, and flavor. [NOTE TO TEACHER: Other groups might compare coffee made in three different types of coffee makers, instant coffee, and perked coffee; cocoa prepared from whole milk, low-fat milk, and dried milk; cocoa made from a purchased mix, a home prepared mix, and from scratch.] Each group should share their experiences and the information gained.
	Examine recipes for making convenience mixes for cocoa and spiced tea. Estimate the cost of the ingredients and figure the cost per serving. Compare the cost per serving of the home-prepared mix to the cost per serving for a store-purchased mix. Which one is least expensive?
3. Simple meals a. Soups	Study references to develop a list of terms related to soup preparation, and another list of types of soups. Find pictures in magazines of different soups and prepare a "Souper" poster or collage.

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

Discuss the nutritional contributions of various types of soups. Prepare a class graphic to depict the various nutritional levels in servings of different types of soup. Example: compare bouillon, gazpacho, cream of tomato, and meat gumbo. Determine which of the soups the class studied was the most nutritious.

Observe demonstrations on the principles for preparing stock-base soups and milk-base soups. Sample the soups and determine which you prefer for taste. For ease of preparation. For nutrition.

Compare canned, frozen, and dehydrated cream of chicken soups for cost per serving and nutritional value. Then prepare the three soups and compare for taste. Which was the most economical? Which was the most nutritious? Which had the best flavor? Did all the class agree on the flavor test?

Brainstorm to determine ways to use soups as ingredients in other dishes as nutrition boosters, flavor enhancers, and convenience factors. Ask your parents about their favorite ways to use soup as an ingredient. Share this information with the class.

Construct a list of different ways soups can be used in meals. Examples: appetizer, entree, accompaniment. Suggest soups appropriate for different meal uses.

b. Sandwiches

List terms related to sandwiches and their preparation. Read references and recipe books related to sandwiches. Can you add to your list of terms after doing the required reading?

Prepare a bulletin board showing magazine pictures of sandwiches ranging from finger to hero size.

Determine the nutritional value of a grilled cheese sandwich made from two slices of whole-wheat bread, one ounce of American cheese, and one tablespoon of margarine. What other food could you add to have a more balanced meal?

Brainstorm how to vary basic sandwich fillings of cream cheese, tuna, and peanut butter. Examples: nuts, bananas, apples, eggs, bacon, olives, etc. Would these ingredients increase the nutritional contribution of the sandwich filling? The cost?

Study references to learn the principles of sandwich preparation. Give special attention to safety and sanitation regarding sandwich fillings where eggs or mayonnaise or

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	both are included in the ingredients. How should this type sandwich or filling be stored? How should this type of sandwich be prepared for transport, such as to a picnic or to school for lunch?
	Divide into groups of five or six persons. Each group prepares a different sandwich filling. Store properly. View the transparency on "Cutting Sandwiches." (See Transparency 11.) Each group prepares four or five sandwiches from their filling and cuts and serves them creatively for the class or for an open house or other special occasion. [NOTE TO TEACHER: Have a variety of breads available for students to use in making their sandwiches.]
	Evaluate the sandwiches sampled in class. What was your favorite filling? What was your favorite bread? Did you try anything "new"? Select the best sandwiches for school lunches based on cost, crushability, and lack of need for refrigeration.
c. Simple salads	Work in small groups to develop a word game which will help everyone learn terms related to salads. Play the game in your group; then present it to the class. Vote on which group developed the best game.
	Discuss the different ways salads may be used in meals. Examples: tossed green salad as an appetizer; tuna salad as an entree; tomato aspic as an accompaniment; frozen fruit salad as a dessert. List as many salads appropriate to each category as you can. Are some salads appropriate for more than one category?
	Predict the nutritional contribution of a fruit salad made of grapefruit sections and avocado slices for the daily requirement for Vitamin C.
	Visit a cafeteria and count the types of salads being served. How many are vegetable? How many are fruit? How many are gelatin? Interview the cafeteria manager to determine which salads sell best. Which salads are high in nutritional contribution but low in calories? How many calories do various dressings add to salads? Name different types of salad dressings.
	View the transparency "Various Types of Salad Greens." (See Transparency 12.) How many of these types are available in local supermarkets? Are they available at all times of the year, or are some types seasonal?
	Plan and prepare a salad buffet. Each group selects one type salad: vegetable, gelatin, fruit, or protein. Sample the salads and evaluate them for quality and taste. After the lab, share information gained with the other groups.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Participate in a "Surprise Ingredient" lab where the ingredients are things on hand which need to be used. Create the most nutritious and attractive sandwiches, salads, soups, or snacks that you can using these "surprise" ingredients.
d. Cookies and easy desserts	Brainstorm to identify easy-to-prepare desserts you enjoy. How nutritious are the desserts you enjoy? Which are most nutritious? Least nutritious?
	Develop several copies of a class cookbook of favorite easy-to-prepare, but nutritious, desserts. [NOTE TO TEACHER: Have students sell the cookbooks as an FHA/HERO project, give them to students who will be enrolling in 7th and 8th grades next year, or distribute them to parents of students currently enrolled in 7th and 8th grade homemaking classes.]
	Prepare simple, but nutritious, desserts. Evaluate the taste, appearance, and nutritive value of the desserts.
	List as many types of cookies as you can. Star your favorites. Discuss ways the nutritive value of cookies can be increased. Identify the cookies on your list by the type of preparation–bar cookies, drop cookies, refrigerator cookies, rolled cookies, pressed cookies, or molded cookies.
	Watch a demonstration on the preparation of cookies. How are cookies similar to cakes? How are they different? What method is used to mix cookies? Which method is easiest to prepare? What factors affect the baking times and temperatures of cookies? How should cookies be cooled? How can cookies be decorated? How should they be stored?
	Prepare cookies as part of a meal or snack lab. Use appropriate preparation techniques. Evaluate the quality of the finished product.
	Prepare several versions of cookies from a basic recipe. Serve the cookies at an FHA/HERO function. How can cookies be served attractively for a special function. Evaluate the results.

COMPETENCY: *Ability to analyze career and job opportunities*

SUB-COMPETENCIES: *Identify careers related to food and nutrition.*

Determine personal qualities and educational preparation necessary for employment in food service careers.

Predict employment outlook in food-related jobs.

Identify food and nutrition-related community service opportunities.

Interpret local part-time food service job opportunities.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
F. Careers Related to Food and Nutrition	Construct a class list of jobs related to the food industry. Put each job name on a 3" x 5" card. Shuffle the cards and have the teacher put a card on each student's back. Circulate among classmates and exchange questions and answers for clues to your job identity. As soon as you have determined what your job is, be seated. [NOTE TO TEACHER: Set a time limit for playing the game.] View the transparency "Career Awareness." (See Transparency 13.) Are some of the jobs the same as those identified in your class list? How many are different? Identify qualities and skills needed by workers in food-related jobs. Are many of the qualities similar to qualities needed for any kind of job? Discuss examples such as dependability, honesty, etc. Which qualities and skills are also needed to be a successful homemaker? Analyze your class list of jobs related to the food industry to determine which jobs would require some special qualities. Discuss qualities that would be useful in the following jobs: food editor, consulting nutritionist, cannery worker, purchasing agent for restaurant chain, television food show demonstrator, cook, waiter/waitress, bus person, dishwasher. Study references on careers to determine which food-related jobs require educational training beyond the high school level. List the specific jobs and the kind of training required. Look up current information on the number of people eating outside the home. Predict what the employment outlook will be for food service jobs during the next five years. Study resources to get ideas for a chart about career opportunities in jobs related to food and nutrition. Make the chart.

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

Brainstorm to identify opportunities for volunteer service related to food and nutrition in your community. Examples: cooking or serving food for a fundraising event, helping deliver meals to elderly persons. How could these volunteer activities provide community service as well as help you gain job-related experiences?

Examine the yellow pages of the telephone book and the want-ad section of your local newspaper to identify businesses which might offer part-time jobs related to food and nutrition in your area.

Interview some of your friends who have been employed in part-time jobs related to the food industry. Did they have any special knowledge, experience, or training that helped them get these jobs?

What are the procedures for obtaining a food handler's card? Who should you contact? What requirements do you have to meet?

Pretend you are going to apply for a part-time job next summer. What job would you like? How would you go about getting the job? What experience or training have you had that might help you get the job you want?

Invite several managers of local restaurants or food service establishments to talk to the class about jobs in food service. Ask questions such as: What qualities would be required? What skills would be needed? How many part-time employees are needed? What opportunities for advancement are available? What education is required for advanced positions? What is the current employment outlook for the food service industry?

HOMEMAKING I
FOOD AND NUTRITION

COMPETENCY: *Ability to determine nutrition needs of family members throughout the life cycle*

SUB-COMPETENCIES:

Describe the six classifications of nutrients.

Determine good food sources for each nutrient.

Outline the functions of each nutrient.

Plan meals using the Daily Food Guide.

Determine the number of servings from each food group required by various age groups.

Determine how food requirements differ from one person to another.

Analyze the relationship of weight control/physical fitness and nutrition.

Apply the seven Dietary Guidelines for Americans to meal planning.

Analyze personal nutrition.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
A. You Are What You Eat 1. Nutrients a. Classification	Discuss and define *nutrition*. Start a list of "Terms" where you can record the definitions related to food and nutrition.
	Study references to determine the six classifications of nutrients. Add the names and definitions of each of the six nutrient classifications to your "Terms" list. What nutrients fall into each classification? How is each classification essential for human health? [NOTE TO TEACHER: The six major nutrients needed for human health are proteins, carbohydrates, fats, vitamins, minerals, and water.]
b. Sources	Identify the components of protein. Explain the differences between complete and incomplete proteins. What food sources provide complete protein? Incomplete protein?
	Study references to learn how foods containing incomplete proteins may be accompanied by other foods to form complete proteins. Find as many examples as possible and construct a bulletin board or poster which de-

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	picts food combinations that build complete protein. Examples: red beans with corn tortillas or corn bread; macaroni and cheese; cereal and milk.
	Determine which foods are good sources of each of the other five nutrient groups (carbohydrates, fats, vitamins, minerals, and water). Clip magazine pictures of all kinds of foods. Work in small groups to sort the pictures collected by the class into grocery bags labeled "Proteins," "Carbohydrates," "Fats," "Vitamins," and "Minerals." Were some pictures difficult to classify? Why?
	From the Daily Food Guide, choose five foods in one food group. Using a Table of Food Composition, look up the nutrient contents of each food. For one serving, record how much of the following nutrients each food provides: protein, fat, carbohydrate, calcium, iron, vitamin A, thiamine, riboflavin, niacin, ascorbic acid. From your findings, predict the major nutrient contribution of foods in the food group. Study selected references to determine whether your predictions were accurate.
c. Functions	Study references to find the functions of each major nutrient in the body. What can happen if you are deficient in a nutrient? Predict the results of an excess amount of the different nutrients.
	View a transparency on the functions of nutrients. (See Transparency 14.) Identify health problems related to nutrient deficiencies and excesses.
	View a film on nutrition. Develop a class chart showing the six nutrients, the major food sources of each nutrient, and the functions of each nutrient.
	Work in groups to summarize your knowledge of nutrients, food sources, and functions of nutrients by developing a word game. Exchange games with another group and use the games. Examples: scrambled words, bingo, crossword puzzle, word-gram, Scrabble, etc.
2. Using the Daily Food Guide a. Food groups	Study the Daily Food Guide and write a brief description of your understanding of the five food groups. [NOTE TO TEACHER: Transparency 15 lists the five food groups.] Note the recommended servings for each food group.
b. Number of servings required	Record everything you eat for two days, including snack foods. Analyze what you ate and compare the number of servings from each food group to the recommended number of servings for each. How did you measure up? Make a plan for improving your nutrition. See if you can follow it for one week.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Conduct a class competition to develop posters regarding the number of servings of the various food groups required by a particular age group. Design posters appropriate for use in an elementary school cafeteria. Display the posters.
c. Individual differences	Study references on how individual differences affect food requirements. Examples: age, sex, height, activity level, etc. At what age are the most calories needed daily? Under what circumstances are the least amount of calories needed daily?
	Determine the correct caloric intake for each member of your family according to age, height, body frame, health, activities, and sex.
	Consider other things that may affect food requirements. Select a physical condition which requires a special diet, such as diabetes, hypoglycemia, food allergies, ulcers, etc. Look up information on foods that are recommended for the diet and foods that should be avoided. Give a report to the class.
	List your favorite foods and look up the caloric content for each. Are some of your favorites high in calories? Compare the caloric content for the same food prepared in different ways. Example: baked, French-fried, and scalloped potatoes. What does this information tell someone who needs to reduce calories?
	View Transparency 16 which shows the amount of calories used in various activities. Discuss how excess calories may be difficult to utilize. How do excess calories contribute to obesity?
d. Weight control/fitness	Survey popular magazines and current newspapers to count the number of articles related to weight control and/or physical fitness. Would you surmise that weight control and fitness are topics of great interest?
	Study Transparency 17. How can this information be applied to a weight control program?
	React to the following statement: During the growing years, dieting should be undertaken only under a doctor's supervision. Do you agree with this idea? Why or why not? Research and discuss the problem of *anorexia nervosa.* How does it relate to dieting.
	Analyze meals and recipes to see what substitutions could make them lower in calories. For example, a substitution of carrot or celery sticks served with a sandwich would provide "crunch" but fewer calories than potato chips. Discuss other ways menus may be adjusted for persons who need to lose, gain, or maintain weight.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Develop guidelines for judging the reliability of articles in current magazines and newspapers relating to nutrition, weight control, or physical fitness. Examples: Author has reliable credentials and training (not just a famous athlete or movie star); sound research is cited; language and figures are specific (not vague or exaggerated); research was not funded by a commercial firm advocating a particular product. Find one example of an article which you think is reliable and one you think makes some exaggerated claims. Share the article with classmates.
	View the transparency "Nutrition News Articles." (See Transparency 1.) Take a vote on which article is reliable. Discuss and point out the factors which indicate reliability.
3. Planning individual nutrition a. Meals at home and away	Using the Daily Food Guide and your own caloric needs, plan menus for a week that will provide an adequate, well-balanced diet. Consider the number of meals you eat at home when making your plan. If you need more calories than those provided by meals, plan some nutritious snacks. Do you think you will be able to follow your plan? Is it easier to control what you eat when you eat at home or when you eat away from home?
	Discuss some ways persons who are watching their weight could resist temptation when eating out. Examples: Avoid fast-food restaurants; look for a nutritious salad bar; choose poultry or fish instead of pork or beef; decline desserts.
b. Dietary Guidelines	View videotapes based on the USDA Dietary Guidelines for Americans. [NOTE TO TEACHER: If videotapes are not available, use films, filmstrips, or references, or use Transparency 18.] Discuss the Guidelines that concern you most. Which of the Guidelines is designed for healthy people?
	Modify a specified diet to assist someone in controlling cholesterol, calorie intake, sodium intake, or to meet another dietary problem. What are the characteristics of such a diet?
c. Planning for the future	Predict how your current eating habits may affect your future health. Are eating habits easy to change? Have you ever changed an eating habit? How did you do it and what were your reasons? Share with the class.
	Write a "Personal Nutrition Contract" in which you set realistic, specific goals for nutrition. Your contract might be as simple as "Eat more vegetables" or "Drink more milk." Set a date for achievement and make some specific

plans for implementing the contract. Sign your contract, and evaluate yourself periodically. Utilize information regarding the five food groups, weight control, dieting, and physical fitness.

Predict how changes in lifestyle in the future can create the need to re-evaluate diet patterns. Examples: Less physical activity creates the need for less calories; working at night causes meals to be eaten at different times. How might occupational choice affect your diet? How might pregnancy affect one's diet?

COMPETENCY: *Ability to manage family meals*

SUB-COMPETENCIES:

- *Identify efficient kitchen work techniques.*
- *Utilize work simplification in food preparation.*
- *Analyze the efficiency of food preparation techniques.*
- *Plan ways to save time and energy.*
- *Determine factors affecting variety in menu planning.*
- *Plan menus for family meals.*
- *Demonstrate effective utilization of resources in preparing meals.*
- *Plan appropriate table settings.*
- *Demonstrate appropriate table manners.*

CONCEPTS

B. Meal Management
   1. Time and energy management

LEARNING AND EVALUATION EXPERIENCES

Define *work simplification*. Study references to identify principles of work simplification. Brainstorm to list ideas that may simplify work in the kitchen.

Interview several adults who prepare meals for families. Obtain suggestions for work simplification to share with the class. Examples: melting chocolate in its wrapper in the oven to save washing a utensil; melting margarine in a saucepan and later using the same pan to heat a vegetable; using the wrapper from a stick of margarine to grease baking pans.

Demonstrate a task in which you use work simplification principles. Examples: Use both hands to set a table; plan tasks to save trips across the kitchen; store food and utensils conveniently according to place of first use; store most frequently used items within easiest reach.

Work in groups to write and present skits showing how efficient use of time and motion in washing dishes can save time and energy.

Demonstrate how correct posture and movement may simplify tasks. Examples: Bend you knees, not your back; get several things from the cabinet, pantry, or refrigerator at one time in order to save trips.

Associate work simplification techniques with efficiency by discussing the following questions: What does it mean to work efficiently? How may good work habits improve your efficiency? What questions may be asked about task performance that could lead to more efficiency?

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

Analyze specific tasks to determine excessive time and energy expenditures. Examples of tasks: preparing a sandwich, cleaning the range. What were the causes of the excessive time expenditures? Energy expenditures? How may time and energy be saved when performing these tasks? [NOTE TO TEACHER: Tasks might be video-taped. Show examples of poor kitchen management techniques first, then compare with video-tapes of good techniques.] Plan ways to save time and energy in performing a task you do frequently. Ask someone to observe you performing the task in the usual way. Discuss ways time and energy might be saved. Perform the task again using the suggestions discussed. What was the result?

Design a bulletin board or poster which shows ways to save time and energy in meal preparation.

View the transparency "Food Preparation Schedule." (See Transparency 3.) Discuss the advantages of this technique for preparing meals. Identify any disadvantages.

Read references to determine what is meant by the term *dovetailing.* How would this technique save time or energy?

Write an article for the state or local Young Homemakers of Texas newsletter or extension newsletter describing techniques for work simplification in the kitchen. [NOTE TO TEACHER: This could be a class activity or an individual effort.]

Brainstorm in small groups to determine factors to consider when planning menus. Examples: nutritional needs of individuals; food habits; acceptability of foods; social, cultural, and economic influences; time and energy available; equipment and foods available; ability of cook; variety; and Daily Food Guide.

Examine how various factors may influence menu planning for specific situations. How may a specific factor produce different effects in different families? Examples of situations: The mother works from 8-5; the family has three active teenagers; the family has a new baby; the father works nights; the single parent works and cares for children; the husband arrives home first in the evening.

Plan a day's menus for a given family considering various factors which may influence meal planning. Tell how the meals planned are suited to the family's resources.

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

Discuss the advantages and disadvantages of planning menus by meal, daily, weekly, biweekly, or monthly.

Determine the steps to follow when planning menus. Include a time and place to plan, use of the Daily Food Guide, checking supplies on hand, reading newspaper food advertisements for special prices, and making a shopping list.

Brainstorm in groups to determine all the human and material resources required to prepare food. Examples: time, energy, knowledge, skill, equipment, food, kitchen arrangement, etc.

Interview several homemakers (both males and females). Ask them to share ideas that help them manage meal preparation more efficiently. Examples: doubling recipes so that one portion may be used now and one frozen for use later, organizing equipment, planning shopping lists using menus, dovetailing tasks, improvising equipment, using a pressure saucepan for vegetables and meats, using convenience foods, preparing convenience foods at home, etc.

Describe ways the resources of time, energy, money, materials, and equipment are interrelated. Consider the following: How does time available affect equipment needed in the kitchen? How does personal energy level affect the amount of time spent in the kitchen?

Discuss how resources for managing family meals are limited by other considerations. Examples: Time is limited by other demands like a job or young children; energy is limited by health concerns like illness or physical handicap. Other limiting factors include health, equipment, money, space, kitchen arrangement, experience, and knowledge.

2. Variety in meals

Study references and view films or filmstrips on the importance of planning variety in meals. Add a definition of *aesthetic* to your "Terms" list. Write a paragraph on the topic, "Aesthetic Qualities Increase Enjoyment of Food." What factors are included in aesthetics?

Bring to class pictures of food from current magazines. Select food pictures for a menu which would include a pleasing variety of color. Evaluate selections in class and make suggestions for improvements, if needed.

Discuss the variety of textures found in foods. Include mealy, soft, hard, crisp, smooth, crunchy, and stringy. List as many foods having these texture qualities as you can.

Decide what is wrong with the combination of textures in the following menus: meat loaf, mashed potatoes, English peas, gelatin salad; fried chicken, French-fried potatoes, stuffed celery and carrot sticks. Suggest which foods could be changed in each menu to create more texture variety.

Brainstorm in small groups to think of shapes that foods have. Plan a lunch menu which includes a variety of food shapes.

Collect sample menus from magazines, recipe books, or other sources. Analyze the menus to see if a variety of food temperatures were included in the menus. Make suggestions for improvement of temperature variety, if necessary.

Participate in a group discussion on variety in food flavors. How many different flavors can you think of? Examples: sweet, sour. [NOTE TO TEACHER: Groups should identify spicy, bland, sweet, sour, bitter, etc.]

Taste several different dishes of colored gelatin prepared by the teacher. Describe the flavor of each. What influenced your thinking? Can color deceive taste? [NOTE TO TEACHER: Prepare several dishes of unflavored sweetened gelatin adding green, yellow, red, and orange food coloring to separate dishes.] Your teacher will tell you how the gelatin dishes were prepared.

Analyze the adjustments in aesthetic qualities of menus which may be needed for specific situations. Consider situations of age, physical capabilities, taste sensitivity, health, and culture. Examples: Children may be more impressed than adults with decorated food. Handicapped individuals may prefer finger foods due to inability to control eating utensils. Children have a higher sensitivity to strongflavored food than adults. Elderly persons may have difficulty chewing or digesting some foods. A person's health may require a liquid diet. Cultural food habits may make certain forms of food more acceptable than other forms.

Write down all the foods you ate at your last meal. Evaluate the menu for aesthetic qualities. Did you have a good variety? Can you think of ways more variety could have been included? Share with classmates.

Observe the selections made in the school cafeteria at lunch. How many students included a variety of color, texture, shape, temperature, and flavor?

Plan breakfast, lunch, and dinner menus featuring the foods included in the food preparation unit (eggs, fruits and vegetables, quick breads, cereals, pastas, meat, fish, poultry, and desserts). Be sure to include a variety of colors, textures, shapes, temperatures, and flavors. Prepare the menus planned in foods labs for breakfasts, lunches, dinners, and snacks. Evaluate the results.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
3. Table settings and service	Define the term *table appointments* after studying several resources. Study basic principles of art, including line, design, color, shape, balance, and proportion. Discuss how these principles can be used to select attractive table appointments. Demonstrate the correct placement of table appointments, including linens, dinnerware, flatware, glassware, accessory items, and table decorations or centerpieces. Have other students critique your placements and offer suggestions for improvement. Invite a florist, garden club member, or creative homemaker to demonstrate ways to arrange centerpieces. Request that the demonstration include low-cost suggestions. [NOTE TO TEACHER: Emphasize creative uses of vegetables and fruits (which can be eaten later), dried plant materials, wild flowers, etc.] Work in groups to demonstrate correct place settings for specific menus to be prepared in breakfast, lunch, and dinner foods labs. A flannel board and construction paper cutouts might be used. Have the class evaluate your demonstration. Plan creative and inexpensive ways to provide various table appointments. Examples: Use hand towels for placemats, bandannas for napkins, jelly glasses for glassware. Compile a class list of the best suggestions. Study references to identify the basic styles of meal service including plate service, family service, and buffet service. Are these styles of service formal or informal? What factors may influence which style of service a family uses? Do families generally use the same style of service all of the time? What styles of service are found in the various types of food service establishments? Study the buffet setting shown on Transparency 19. What determines how a buffet table is set? Brainstorm with classmates to determine occasions when each style of informal service would be most appropriate. Example: buffet service for a large group when lack of enough dining chairs would be a problem. Survey the class to determine which style of informal service is most acceptable and which is least acceptable. Discuss reasons people may feel more comfortable with a particular style of service. What would be the advantages of being able to use any of the basic styles of service?
4. Table manners	Study references, such as a current etiquette book, on table manners appropriate for informal, family

use. Discuss your findings in class. Are the suggestions practical? Do you think the principles and rules on manners are important? Why or why not?

Role play meal situations such as the following: 1) Father sits reading the paper; Mother leaves the table several times; children shout, argue, and place elbows on the table; everyone is half-watching television. Identify the rules which were ignored. Predict how these behaviors would affect the family's enjoyment of the meal. 2) Four teenagers are on a dinner date at a family restaurant (not a fast food establishment). How should a guest determine an appropriate price range for ordering? Who should order first? How much tip should be left? What rules of conduct can make eating in a restaurant a pleasant experience? Suggest ways to improve each situation and have the players do a series of "instant replays" depicting the improvements as they are suggested.

Work in small groups to develop a quiz game on basic table manners which can be played in about 15 minutes. Exchange games with another group and use their game to review your understanding of table manners.

Identify ways that consideration of others may be shown at mealtime. Cite situations when table manners have been ignored. What were the results?

Practice using appropriate table manners during participation in breakfast, lunch, dinner, and snack foods labs. Check references to determine the appropriate way to eat foods you have not encountered before and to find appropriate solutions to any unfamiliar situations you encounter.

COMPETENCY: *Ability to apply consumer skills to food buying*

SUB-COMPETENCIES: *Identify and interpret information on labels.*

Analyze food packaging from a consumer's viewpoint.

Utilize effective shopping techniques.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
C. Consumer Aspects of Food Buying 1. Reading labels	Bring to class labels from food products in each food group. Study the labels to identify information that is common to all food labels. Study references on labeling laws, then discuss in class what information is required by law and what information is merely descriptive. Examine again the labels that were brought to class and look for the information required by law. Why do you think this information is required? Who would need to know this information? Study the list of ingredients on a food product label. Note that the ingredients are listed by weight in descending order. Example: "Water, sugar, and flavoring" indicates the product is chiefly water, and that the amount of sugar is greater than the amount of flavoring. Why would this information be valuable to a consumer? How are contents and price related? Study labels to analyze the information listed. Cross out words which do not provide consumer information that is required or informative. Are some labels more informative than others? Are nutritive value and cost related? Study references about the federal standard of identity for foods. Why are ingredients not listed on food items for which standards of identity have been established? List foods which are usually graded. Study references to determine the various grades and their definitions. Include these new definitions in your "Terms" list. Construct a bulletin board depicting the various grades of eggs and meats. Look up the nutritive value of different grades of meats and eggs. Does the grade affect the nutritive value? What would this mean in terms of planning family meals on a limited budget? Find examples of labels from foods such as milk, ice cream, and mayonnaise. Note the list of ingredients. Explain reasons for food standards.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	View Transparency 5 on label parts. Review your understanding of labels by identifying and explaining all the indicated parts of the label. [NOTE TO TEACHER: Parts to be identified include price, product name, product illustration, Universal Product code, manufacturer's name and address, net weight, nutrition label, and ingredients listing.]
2. Packaging	Brainstorm to identify various types and sizes of packaging. Examples: cans, boxes, plastic film, foil-wrapped, etc. What purposes does packaging serve?
	Study references to identify the standard sizes of cans. Examine canned products that come in different sizes. Examples: peas or pineapple. Determine what the price per serving is for each size can. Does the size of the can influence the cost of the product?
	Compare the price of the same food item canned in glass jars and in cans. Example: pimentos. Does the price indicate a difference in the cost of packaging materials?
3. Shopping for food a. Shopping lists	List the advantages of shopping with a list. Discuss your list with the class.
	Develop a class list of guidelines for preparing a shopping list. Example: Consult menu plans for the week, day, month; make a list of ingredients needed for each recipe; check foods on hand; determine quality, quantity, and form for each item needed.
	Practice making a shopping list for a given menu, assuming that you have on hand the staples such as flour, salt, and sugar.
	Study resources on shopping and look for tips on writing a shopping list. Example: List items in the approximate order in which they are arranged in the store.
	Volunteer to do the shopping for your family or for an elderly person who may need assistance in buying food. Follow guidelines developed in class. Report your experience to the class. Did you forget anything essential? Were extra trips to the store required? Do the guidelines need to be revised?
b. Replacing staples	Define *food staples.* Add this definition to your "Terms" list.
	Discuss food staples in class. Prepare a list of foods considered staples by the majority of the class. Are there differences of opinion? Do food habits and customs in various families affect the foods considered to be staples?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Interview homemakers to determine what foods they consider staples. Ask how they plan to avoid running out of food staples. Do they try to replenish staple foods when they are on sale, or just when they need them?
	Examine the supply of food staples in your home kitchen. Examples: crackers, coffee, flour, eggs, milk, bread, sugar, salt, etc. Estimate when purchases will need to be made to replace these items. Will spreading the purchase of staple foods over several shopping trips help even out the amount of money needed for food each time?
	Identify factors that might prevent purchasing large quantities of staple foods at one time. Examples: cost, storage limitations, infrequent use, pests.
	Discuss the advantages of having an adequate supply of food on hand. Examples: enables you to wait and buy staples on sale, prevents extra trips to the store, etc.
c. Unit pricing	Study references to learn about unit pricing. Do all stores use unit pricing? How can you figure the unit price?
	Figure the unit price and decide which cereal is the best buy in the following examples: 12 ounces @ 60 cents; 18 ounces @ 72 cents; 8 ounces @ 48 cents.
	Discuss situations in which purchasing the largest size may not be economical even when the unit price is lower. Examples: if product cannot be used before it spoils, if buying for only one or two persons.
	Analyze meat prices according to the number of servings per pound. Study references to determine the number of servings per pound in different cuts and kinds of meats.
	Compare the cost of one pound of steak to one pound of ground beef and one pound of chicken. Compare the number of servings per pound for these three meats and decide which would be the best buy. Consider the amount of fat and bone before making your decision.
d. Universal Product Code	View Transparency 20 on Universal Product Codes. Identify the various information provided by the Universal Product Code. Study the sample computer tape. What information is included that is not on a regular cash register tape? Discuss ways the supermarket uses this information.
	Survey stores in your area to determine how many use the computer check-out method which utilizes the Universal Product Code. Report the results to the class. Do

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	you think this method will be more common in the future? Why or why not? [NOTE TO TEACHER: If computer check-out is not used in your area provide handouts, reading assignments, or show a film instead.]
	Interview the manager of a store which uses the Universal Product Code. Ask the manager what problems were experienced in implementing the computer check-out system. What are the advantages and disadvantages to the consumer? To the store?
e. Kinds of stores	Brainstorm to list types of stores where food may be purchased. Include supermarkets, neighborhood grocery stores, and discount stores. What differences would you find in each of these types of stores? Examples: selection, cost, availability.
	Discuss various services provided by different food retailers. Examples: trading stamps, double and triple coupon days, premiums, advertised specials, extended hours, home delivery. How do these factors influence the cost of food?
	Define the term *loss leader*. Examine grocery ads from your local newspaper to identify loss leaders. How many did each store offer? Is this technique beneficial to the customer or to the store? Why?
f. When to shop	Interview a grocery store manager to find out when selections are freshest and most complete. When are produce deliveries made? Dairy deliveries? Bread deliveries? When are shelves stocked? Find out when the store is most and least busy. On which days are specials offered? Store coupons? Double coupons? Make a chart showing this information for major stores in your shopping area.
	Interview five homemakers to determine when they shop. Ask if they shop at a certain time of the day, a certain day of the week, weekly, daily, biweekly, or monthly. Share the results with the class.
	Discuss what affects shoppers' decisions as to when to shop. Examples: double stamp day, work hours, babysitter availability, etc.
	Survey class members to determine how many families shop at more than one store regularly. What factors affect the choice of store? Examples: location, good selection, good prices, familiarity with the store.
	Discuss what may happen if you shop when you are hungry. Will you be more easily tempted to buy things not on your shopping list? What other factors may increase the temptation to purchase unplanned items? How do signs, placement of displays, and placement of items on shelves affect purchases? How can you avoid being tempted?

COMPETENCY: *Ability to utilize basic kitchen skills in food preparation*

SUB-COMPETENCIES:

Develop safe practices in the kitchen.

Utilize sanitary practices in food handling.

Demonstrate proper use and care of equipment.

Use appropriate methods for storing food, supplies, and equipment in the kitchen.

Analyze special storage problems of the handicapped.

Interpret food preparation terms used in recipes.

Interpret abbreviations used in recipes.

Utilize appropriate equipment and techniques for measuring and mixing foods.

Utilize equivalent measures.

Select appropriate substitutes for recipe ingredients.

CONCEPTS

D. Basic Kitchen Skills
  1. Safety and sanitation
    a. Safety

LEARNING AND EVALUATION EXPERIENCES

Study references to become aware of safety hazards in kitchens. Discuss your findings in class and prepare a chart of safety suggestions.

View Transparency 8 on "Safety Hazards in the Kitchen." Identify as many hazards as you can in five minutes. List the safety suggestions which would correct the hazards. Use the information on the transparency to evaluate the kitchen in the foods laboratory.

Study resources to determine how many home accidents are reported. What room in the house is the least safe? What kinds of accidents were reported most frequently? Can you offer a safety suggestion to prevent these accidents?

Discuss accidents that have happened in your kitchen at home or at a friend's house. Could these accidents have been prevented? How?

Invite a home economist from business or the extension service to speak to the class on the safe use and care of equipment. Ask questions about safety factors related to the use of gas and electric ranges and other kitchen appliances. Predict the consequences of improper use and care of equipment.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Work in groups to research and demonstrate for the class safety practices to follow when using and caring for knives, can openers, pressure pans, saucepans; controlling pests, etc. Take a class vote to determine which group gave the most effective presentation.
b. Sanitation	Study references to form a definition of *food-borne illness.* Identify as many kinds of food-borne illnesses as possible and determine the usual sources of sanitation problems which contribute to illnesses. How are these diseases transmitted? What role does personal sanitation in the kitchen play in food-borne illness?
	Find newspaper accounts of food-borne illness outbreaks and read to find the cause. What sanitation problems may have contributed to the outbreak? Who was responsible for the problems in each case?
	Work in groups to develop a list of personal sanitation standards to be followed when working with food. Examples: Wash hands thoroughly before handling food; do not handle food if hands have cuts or sores; do not taste food with fingers or utensils used in food preparation. Share your list with the class.
	Prepare agar plates to show the growth of bacteria resulting from the lack of personal cleanliness. Include plates on which a student has placed a hair, coughed, sneezed, touched with dirty hands, and touched without washing hands. View and discuss the results after two days and after four days.
	Demonstrate for the class the rapid growth of bacteria. Contaminate three slides with bacteria. Store one slide at 35°F (2.5°C), one at 125°F (51°C), and one at room temperature. Examine the slides after one hour and compare the growth of the bacteria. What conclusions can be drawn regarding the safe storage of food?
	Work in groups to develop brief skits which demonstrate personal sanitary practices. Evaluate the skits as to accuracy and interest. Would the skits be informative enough to prevent food contamination? Skits might be presented to groups such as parents and teachers on "Parents Night."
2. Equipment use and care a. Range/Oven	Study resources on the use and care of gas and electric ranges. Identify the aspects of use and care that are the same for each type of range and the aspects where there is a specific difference.
	Participate in a small group demonstration of the use and care of a gas or electric range. [NOTE TO TEACHER:

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Select students for groups who have not had experience with the type of range they will be demonstrating.] How can you conserve energy when using the top of the range? What effects do heat, pan size, and pan type have on energy use? How does cooking food only to the point of doneness save energy? How can you save energy when using the oven?
	Develop a bulletin board or poster for the class which illustrates use and care tips for ranges. Examples: Use foil under a dish in the oven when the contents may bubble over; wipe out the oven after each use; wipe the range surface with a dry cloth when hot, or a damp cloth when cold.
	Discuss in class how proper use and care may lengthen the life of the range, decrease the number of service calls and repairs, and contribute to safety and efficiency.
	Visit an appliance store to learn about the special types of ovens available including convection and microwave ovens. What features are available in these ovens? What rules should be followed in their use and care?
b. Refrigerator/Freezer	Read use and care booklets for refrigerators and freezers. Write a brief summary of the use and care of refrigerators and freezers. What features are available in refrigerators and freezers? What rules can save energy in the selection and use of the refrigerator or freezer?
	Look up a recent report in a consumer magazine on various brands of refrigerators or freezers. Study comparisons, especially those features related to use and care. Which brand would you select? What are your reasons?
	Obtain information from reliable sources on the amount of energy used by major appliances and the cost of that energy. What energy-saving features are appliance manufacturers advertising? What tips can you give for saving energy through proper use of large appliances?
c. Dishwasher	Study the dishwasher in the foods laboratory and its use and care manual. What temperature should the water be? What cycles are available? What features does the dishwasher have? How should dishes be loaded? How can energy be saved when using a dishwasher?
d. Food waste disposer	Observe a demonstration of the food waste disposer in the foods laboratory. How is food fed into the food waste disposer. What safety precautions should be observed? What features does the disposer have? How should it be cared for?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
e. Trash compactor	Visit an appliance store or home to observe a trash compactor. What is the purpose of a trash compactor? What supplies are necessary for using a trash compactor? What features are available on trash compactors? What safety precaution should be observed? Volunteer to care for a major appliance in your home for a week. Use proper procedures. Report the results to the class.
f. Utensils and small appliances	Study references to identify materials used in the construction of small kitchen equipment and the characteristics of each material. Examples: aluminum, steel, copper, glass, plastic, iron, enamel, Teflon. Demonstrate the correct method for cleaning one of the materials used in small kitchen equipment. Be prepared to answer question and support the cleaning method you selected. Discuss the various materials and evaluate their heat transfer properties. Experiment to locate "hot spots." How important is even heat distribution? What will happen if heat is not evenly distributed? View a demonstration in which one cake layer is baked in a glass pan, one layer in a round metal pan, one in a square metal pan or loaf pan, and one in a muffin pan. Bake all products the same amount of time and at the same temperature. Evaluate the products. What are the differences? Which pan browned the product most evenly? What conclusions can you draw? Place a slice of bread on two cookie sheets. Put one cookie sheet on the top shelf of the oven and one on the lower shelf. Bake for 6-8 minutes at 400° F. Did both slices of bread brown evenly? If not, which shelf location produced the most browning? Would you recommend switching or rotating the pans when even browning is required? Why? Read the use and care information on a small appliance in the foods laboratory. Demonstrate the appliance and tell how to care for it. Examples: pressure saucepan, blender, food processor, toaster, broiler oven, electric skillet, slow cooker, coffee maker, mixer. What are the advantages and disadvantages of using each small appliance? View a film or filmstrip showing the proper techniques for using kitchen knives. Discuss how to care for and store knives.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Help set up an exhibit of kitchen gadgets. List the uses for the gadgets on slips of paper and place in a bowl. Take turns drawing a "use" from the bowl; then select the correct gadget from the exhibit for that use.
	Read consumer magazine reports on cookware. How much difference in price was indicated between the most expensive and the least expensive cookware? What features were included in the recommended cookware? How does the price of the recommended cookware compare to the price of "waterless" cookware listed in the magazine?
	Research small kitchen aids that are available to assist a handicapped person in food preparation. Include physical modifications and specialized equipment. What problems may persons with various handicaps encounter with standard kitchen utensils and equipment? How can each problem be solved?
3. Kitchen organization a. Storage	Work in groups to list equipment and supplies used in the planning, cleaning, cooking, mixing, and serving centers of the kitchen. Determine the most efficient storage place for each piece of equipment based on the rule "Store near the place of first use."
	Collect pictures of storage devices for today's kitchens, such as lazy Susans in corner cabinets. Display the pictures on the bulletin board.
	Study resources to determine efficient storage guidelines for equipment and supplies. Examples: Store items near their first use; have a place for everything; store heavy items on lower shelves; store infrequently used items in less accessible places. Examine the storage in your kitchen at home. Does it meet the guidelines? Could equipment and supplies be rearranged for more efficient use? Share your suggestions for improvement with the class.
	Select an item of small kitchen equipment or food staple from a kitchen unit in the foods laboratory. Tell the class where the item is stored in the foods lab. Is this a good place to store the item? Support your decision by citing one of the storage guidelines.
	Work in groups to prepare two skits depicting poor storage and good storage arrangements. Perform the skits emphasizing the improvement in efficiency with the good storage arrangement. [NOTE TO TEACHER: Class could count the number of trips across the kitchen during each skit. Discussion following the skits could determine suggestions for saving time and energy.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Brainstorm in groups to develop some special storage tips useful for persons with handicaps. Examples: Use pegboard to store items in open and easy-to-reach places; drawers and doors should open easily.
	Develop awareness of the storage problems encountered by handicapped persons. Use a wheelchair, crutches, blindfolds, etc., and have each person in the lab group determine which storage areas they could best utilize if handicapped. Make a list of suggestions based on the simulation experience.
	Read references on food storage. Discuss in class the proper storage for meats. bread, fresh vegetables and fruits, eggs, dry cereals, canned foods, and frozen foods. Indicate the proper temperature, container, and length of time each food should be stored.
b. Arrangement	Study references to identify the various shapes of kitchens. What is the most preferred shape? Discuss the work triangle. What are some reasonable dimensions for the triangle?
	Identify the three major work centers in a kitchen. List examples of tasks performed in the kitchen, including planning, preparing, mixing, cooking, serving, and cleaning tasks. Decide which work center would be best for each task. What equipment is needed in each work center? Is some equipment needed in more than one work center?
	Prepare a bulletin board showing the three work centers that include the sink, refrigerator, and range. Include a list of tasks performed in each work center.
4. Reading recipes a. Terms	Define *recipe*. Add this definition to your list of "Terms."
	Discuss in class the components of recipes. View Transparency 9 of a simple recipe. Locate and identify the various kinds of information included.
	Study recipes from a variety of sources. How does their order and organization vary? Could you find all of the components in each? Which recipes do you think would be easiest to use? Why?
	Look up cooking terms in a variety of resources. Examples: stew, boil, bake, fry, pan-fry, broil, etc. Find definitions for the various cutting terms such as chop, shred, mince, dice, julienne, cube, etc. Prepare a class list of all the terms identified and defined. Use pictures or drawings as needed for clarity.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Develop a word game using the terms and definitions on the class list. The game could be based on a TV quiz game or be made similar to Scrabble, crossword puzzles, etc. Play several word games in class to become familiar with the cooking terms and their meanings.
b. Abbreviations	Study a chart of abbreviations common to recipes. Use your textbook, a recipe book, and another source. What variations did you find for terms like *tablespoon* and *teaspoon?* Write abbreviations for the following: cup, dozen, few grains, gallon, ounce, pint, pound, quart, square, tablespoon, and teaspoon. Have a classmate check your answers. What may happen to a product if the abbreviation for teaspoon and tablespoon is confused? Select a recipe from a recipe book and write out all the abbreviations. Why do you think abbreviations are used in recipes?
5. Measuring and mixing	Study references on measuring and mixing to identify terms related to those tasks. Examples: level-off, spatula, whip, fold, beat, cream, sift, etc. Select a measuring or mixing task listed on a slip of paper, and demonstrate the task for the class. After watching the demonstration, the class will decide if the task was performed correctly or incorrectly. Discuss whether or not there are other ways to perform the same task. Find pictures of measuring and mixing methods. Copy the pictures and attach to 3" x 5" cards. Write the name of the method on the back of each card. Use them as flash cards with a classmate to increase your ability to identify the various methods. Examples: cut in fat, stir, sift, cream, whip, grate, shred, fold, chop, mix, etc. Participate in a kitchen tool scavenger hunt. Each kitchen group will go to their assigned kitchen with a list of tools to be collected on a tray. The first group finished with all items correct wins a small award or privilege. Lists might include: vegetable brush, vegetable peeler, rolling pin, rubber scraper, measuring cups, measuring spoons, pastry brush, sifter, rotary beater, grater. Watch a demonstration by your teacher on the correct use and care of the electric mixer. Practice inserting the beaters and ejecting them correctly. Discuss safety precautions related to the use of the electric mixer. Identify tasks that can be performed with more than one kitchen tool. Example: Fat can be cut into dry ingredients

with a pastry blender, fork, or two knives. Discuss situations where knowing how to substitute equipment can be an advantage. Examples: on camping trips, in a kitchen with limited equipment, as a newlywed, at someone else's house.

Prepare a class list of measuring and mixing equipment. Interview three homemakers and ask which tools they use often and which tools they use seldom. Record the results and share with the class. Revise the class list into a list of most useful equipment. How many pieces of equipment were eliminated? Can a kitchen have too many tools?

View Transparency 10 on "U.S. Standard and Metric Measures." Discuss why you need to be familiar with measures in food preparation.

Discuss why it is important for measuring equipment to be labeled U.S. Standard. How could products be affected if measuring equipment is not accurate?

Demonstrate the differences in amounts of ingredients measured in a U.S. Standard one-cup measure and the amounts measured using various coffee cups or other containers.

Study several recipes provided by your teacher. Predict the results of following the recipes exactly as written. Can you anticipate any problems you might encounter? How can knowing general proportions, such as in batters and doughs, aid in judging the results of recipes? How common are mistyped or miswritten recipes?

Study resources to find several tables of equivalent measures. Which one seems the most complete and easy to use? Include a copy of the one you like best in the "Terms" list you are compiling.

Rewrite the following recipe so that it will be easier to measure. Peanut butter cookies: 4 tablespoons shortening, 12 teaspoons margarine, 8 tablespoons white sugar, 24 teaspoons firmly packed brown sugar, ¼ cup eggs, 8 tablespoons peanut butter, 4/8 teaspoon vanilla, 12 ounces all-purpose flour, 1 teaspoon soda, 2/8 teaspoon salt. Refer to an equivalents table if necessary. Check your accuracy in making the conversions. [NOTE TO TEACHER: Review the use of fractions, using the chalkboard or a felt board.]

Discuss why it is important to learn equivalent measures. Predict how much time would be saved when measuring the ingredients for the peanut butter cookies by the recipe you converted instead of by the recipe as given above.

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

Demonstrate your knowledge of equivalent measures by increasing a recipe that makes four servings to make six servings. Decrease the same recipe to two servings. Exchange with a classmate to check your accuracy.

Examine recipes in books and magazines to see if you find examples of measurements that need to be converted to a more convenient measure. Report results of your search to the class.

Study references to obtain information about substitutions that can be made in recipes. Look up a substitution chart. Discuss in class what substitutions are apt to be needed most.

Write out the correct substitutions for the following: 1 square of chocolate, 1 cup buttermilk or sour milk, 1 cup cake flour. Check your answers against a substitution chart.

Predict the result if all ingredients in a recipe were substitutions. Why should you use the ingredients as listed if at all possible?

COMPETENCY: *Ability to prepare a variety of food*

SUB-COMPETENCIES:

Utilize appropriate selection, storage, and cooking techniques for eggs.

Apply knowledge of nutrition and food preparation to selection, storage, and cooking of fruits and vegetables.

Apply knowledge of nutrition and food preparation to selection, storage, and cooking of quick breads, cereals, and pastas.

Apply knowledge of nutrition and food preparation to selection, storage, and preparation of meats, fish, and poultry.

Apply knowledge of nutrition and food preparation to selection, storage, and preparation of desserts.

Apply knowledge of nutrition and food preparation to selection, storage, and preparation of beverages.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
E. Food Preparation 1. Eggs	Study references on eggs and egg cookery to identify terms related to egg cookery. Add the terms you did not already know to your "Terms" list.
	Develop a crossword puzzle using the terms and definitions related to eggs and egg cookery. Exchange with a classmate and work out the answers to the classmate's puzzle.
	Listen to a guest speaker from Texas Agricultural Products (TAP) present information on eggs and egg cookery. Discuss in class the nutritional contributions of eggs. Why is the egg included in the meat group?
	Compare the nutrients in two large hard-cooked eggs to the nutrients in one serving of broiled ground beef. [NOTE TO TEACHER: Provide a "Nutritive Value of Foods" chart if one is not included in the textbook available in your classroom.] Which product contains more fat? More calcium? More vitamin A?
	Participate in a group demonstration of candling eggs. Research the topic and practice your technique. Use different grades of eggs and some ungraded ones if available from a local farm. Point out the air space and the yolk. Assign a grade to each egg. What criteria did you use?
	Break the eggs into saucers. Decide if the grade is actually the same as the one assigned during the candling process.

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Examine eggs of various sizes. How many ounces does a jumbo egg weigh? Each weight class for eggs has three ounces difference between it and the next class. If a dozen small eggs weigh 18 ounces, what would be the weight of a dozen medium eggs and a dozen large eggs?

Prepare a chart which shows the grade, size, and price of eggs in your area. Which egg is the best buy? Does the intended use of the egg influence the grade and size selected? Explain.

View a group demonstration on the care and storage of eggs. Watch for tips on which end should be up, storage temperature, when to wash the egg, and how to store leftover yolks and whites.

List ways eggs are used as main dishes, desserts, as ingredients, etc. List convenience foods that contain frozen or dried egg products. Examples: angel food cake mixes, frozen omelet mixes, frozen egg substitutes that are cholesterol-free. [NOTE TO TEACHER: The school lunch director could be interviewed for information about dried and frozen eggs.]

Discuss why there are not more products on the market containing dried or frozen eggs. Could the availability of fresh eggs and their short cooking time be a factor? What storage properties do dried eggs have?

Read references to identify principles of egg cookery. What problems can occur if high temperatures are used to cook eggs?

Watch a demonstration of scrambled eggs cooked at a high temperature and at a low temperature. Evaluate the appearance, flavor, and texture of each product. Hard-boiled eggs could be demonstrated in the same manner. Which product is the most acceptable? Why?

Participate in breakfast and lunch foods laboratories where each group prepares eggs in a different manner. Listen to each group describe their experience, and ask questions if necessary. Evaluate the products prepared by each group for flavor, texture, and color. Discuss reasons some products are judged better than others and how to improve those products the next time they are prepared. [NOTE TO TEACHER: See "Bank-A-Budget" by Doris Karls and Elaine Jordan in *Illinois Teacher*, May/June 1978, pages 274-277, for a plan for involving students in laboratory food budgeting.]

Look at recipes to find examples of the various ways eggs are used as ingredients. Include functions such as to bind, glaze, leaven, coat, thicken, and foam. How does the principle of cooking eggs at a low temperature also apply when eggs are used as ingredients?

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

View Transparency 21 on "Storage Temperatures for Eggs." Why is the rapid cooling of eggs important?

2. Fruits and vegetables

Study textbooks and other resources for information on fruits and vegetables. Identify terms which are unfamiliar and add their definitions to your "Terms" list. Denote kinds and types of fruits and vegetables. Examples: citrus fruits, pomes, drupes, melons, berries, tropical fruits, stem vegetables, seed vegetables, tuber and root vegetables, flower and fruit vegetables, and bulb vegetables.

Discuss in class the nutrients found in fruits and vegetables. What are the two vitamins most associated with fruits and vegetables? Which types of fruits and vegetables are the best source of these two vitamins? What two minerals are found in significant amounts in fruits and vegetables? Name three fruits and three vegetables that are a good source of these two minerals.

Invite a local agricultural extension agent, vocational agriculture teacher, or grocery store produce manager to speak to the class on how to judge the quality of vegetables and fruits. Ask questions about what kinds of vegetables and fruits grow well in your area. Do any families you know grow fruits and vegetables for their own use? Why would people grow their own vegetables and fruits when they are readily available at the supermarkets?

Develop a chart which details information on the selection of fresh fruits and vegetables. Include information gained from the speaker as well as from the textbook and other resources.

Look up tips for the selection of processed fruits and vegetables. Write a list of class guidelines such as: Do not buy cans that have bulging or rusted lids; do not buy frozen foods that have been thawed and refrozen; buy large cans and packages when feasible, rather than small ones; compare the prices in different forms of the same food; buy on sale when possible; read labels.

Read about the grade designations for processed fruits and vegetables. Are the grades used on labels symbols or descriptive words? What determines which grade should be purchased?

Select a topic for a lab group demonstration on the proper care and storage of one of the following: fresh fruits, canned and dried fruits, fresh vegetables, canned vegetables, frozen fruits and vegetables.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Discuss the merits of fruits and vegetables as convenience foods. Consider aspects such as long-term storage of canned, frozen, and dried fruits and vegetables, and the preparation already done by the packer.
	Predict the amount of time and energy saved in American homes each day as a result of using canned or frozen juices for breakfast. Survey the class to see if anyone uses freshly squeezed juice. If so, figure the percentage of class members using fresh juice and the percentage using canned juice or frozen juice. Is there a difference nutritionally between the freshly squeezed and the packaged juice?
	Develop a list of principles for cooking fruits and vegetables. Keep in mind that the end products should be tender, yet firm, with maximum nutrition retained; and color and flavor should be acceptable.
	Conduct a "Fruit Tasting" lab. Include fruits that are not common, such as kiwi, papaya, mango, ugli fruit, Persian melon, casba melon, kumquat, etc. Cut fruits into very small pieces and insert toothpicks for ease in eating. Which fruits did the class like best? Which did they like least? Compare the costs of these fruits to more common ones.
	Prepare dried beans using the slow cooker, the pressure cooker, and the range top. Keep accurate records of time required for soaking and cooking by each method. Evaluate the resulting products for flavor and texture. Which was the preferred product? Which method took the least time?
	Survey the class to determine the five most liked vegetables and the five least liked or least familiar vegetables. Plan a "vegetable enhancement lab" where each lab group prepares one of the least liked or least familiar vegetables. Taste a small amount of each vegetable. Did you find that you liked some of the vegetables you were not familiar with or did not like prepared another way? How do the costs compare with more familiar vegetables?
	Plan menus for breakfast, lunch, dinner, and snack foods labs including appropriate fruits and vegetables. Try different methods of preparing fruits and vegetables for each laboratory experience. Evaluate the foods prepared.
3. Quick breads, cereals, pastas	Brainstorm to develop a list of the grains used in quick breads, cereals, and pastas. Look up terms related to grain products and add those you did not know to your "Terms" list.
	Discuss the native grain of America, corn. The United States produces about 70 percent of the world supply of this grain. Prepare reports on "Our Food Heritage from American Indians."

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

Construct an attractive bulletin board depicting the nutrients in grains. Include carbohydrates, the B-vitamins, protein, minerals, and the bonus benefit of fiber. Be sure your bulletin board gives the complete story including what, when, where, how, and why.

Compare the nutrition labels from several popular cereal boxes. Considering that the breakfast meal should provide about one-fourth of the nutrients for the day, decide if the various cereals provide the correct amount of nutrients, too many nutrients, or too few nutrients. Can too many nutrients be bad?

Compare the price and nutrition in a one-ounce serving of cooked regular oatmeal, instant oatmeal, and ready-to-eat oat flakes. Which is the best buy? What other factors should be considered in deciding which cereal to buy? Examples: time required to prepare the cereal, likes and dislikes of people in the household.

Compare the nutrition label on a loaf of white sandwich bread to the nutrition label on a loaf of whole-wheat sandwich bread. Which is the better buy for nutrition?

Read references on the selection, care, and storage of grain products. Develop guidelines for selecting and storing breads, cereals, and pastas.

Describe several ways to store cereal to keep it fresh and crisp. Include suggestions for containers and locations. What can be done with cereal that becomes limp or tough?

Interview several homemakers to determine what products from the grain family they consider the most "convenient." Ask questions: How often do you use canned biscuits or a mix for making biscuits? Do you use ready-to-eat, "instant" cooked, or regular cooked cereals?

Look for a recipe for a "Master Mix" which can be prepared at home. Prepare the mix and use in at least three recipes for your family. Report the results of this experience to the class. Figure the cost of your "Master Mix" and compare the cost to the cost of a purchased all-purpose mix. Were the purchased products well-liked by family members? If not, what could be done to make the products more acceptable?

Study the principles for preparing quick breads. Plan breakfast, lunch, and dinner food labs in which each lab group prepares a different quick bread. Include breads such as waffles, gingerbread, banana bread, corn bread, muffins, biscuits, pumpkin bread, etc. Be sure the quick breads chosen are appropriate for the menus planned for the lab. Share your planning experiences with the class. [NOTE

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

TO TEACHER: If most of the class is very inexperienced, several labs may be needed, dividing the breads according to difficulty of preparation.]

Demonstrate the preparation of one kind of cooked cereal as part of a breakfast lab. Which cereal was the easiest to prepare? Which would you prefer to eat? Brainstorm for creative additions for adding variety to cooked cereals. Examples: cinnamon, nutmeg, sliced peaches or strawberries, nuts or granola, raisins.

View an exhibit of the many varieties of pasta. Watch a demonstration of the proper cooking techniques for pasta. Should cooked pasta be rinsed after cooking? Why or why not?

4. Meat, fish, and poultry

Define terms related to the preparation of meat, fish, and poultry. Include *amino acids, hemoglobin, trichinosis, collagen, protein, essential amino acids, marbling, prime grade, processed meat, tenderizing, complete protein, iodine, thyroid, thyroxine, goiter, giblets, capon, braise, truss, fricassee, anemia, and iron.* Add those you did not know to your "Terms" list.

Develop a word game based on a TV quiz show. Play the word game in class to reinforce understanding of the terms related to preparation of meat, fish, and poultry.

Study references on the nutritional contributions of meat, fish, and poultry. Look up the daily protein requirements for adults and children. Based on your readings, do Americans generally eat too little, too much, or just the right amount of protein? What are some reasons for this?

Survey the class to determine how many meals eaten in the past week included meat. How many included poultry? How many included fish? Total the meals for meat, and figure the average by dividing the total by the number of persons in the class. Repeat this process for poultry and fish. Which average is the highest? Do you think this reflects a trend in the American diet? Discuss and give the reason for your opinion.

Compare the protein and caloric content in one serving of broiled meat, fish, and poultry. How would this information be important to someone trying to lose weight?

Compare the costs by nutritive value for one serving of steak, one serving of fish, and one serving of chicken. [NOTE TO TEACHER: Provide charts which show the number of servings per pound of meats, fish, and poultry.] Which serving was the most economical for the amount of nutrition received? Which serving was the most expensive for the amount of nutrition received?

Study textbooks on the selection, care, and storage of meat, fish, and poultry. What factors influence the selection of protein foods? Examples: amount of money available for food, taste preferences, food habits, customs, storage available, etc.

View meat charts to identify various cuts of meats, including beef, veal, pork, and lamb. Which cuts are you most familiar with?

Make a poster or bulletin board showing ways to prepare less tender cuts of meats to make them more tender, juicy, and flavorful. Include some favorite recipes or some that you would like to try. What is the advantage of using less tender cuts of meat?

Watch a demonstration on the proper storage techniques for meats. What kinds of storage supplies are required? What temperatures are necessary?

View a transparency showing the forms in which fresh finfish may be purchased. (See Transparency 22.) Visit or call a local fish market or supermarket that stocks fresh finfish. Ask what forms of finfish are available, how many different kinds they stock, what is the best seller, and what are the prices per pound for the various kinds and forms of finfish. Share the information with the class.

Investigate the forms of shellfish available in your area. Check with several stores for price information. Share with the class.

View Transparency 23 on "Characteristics of Fresh Fish" to determine what to look for in the selection of fresh fish. What are four ways to check for freshness?

Prepare a report for the class on the care and storage of both fresh finfish and fresh shellfish. If fresh fish is not available in the area, include information on the proper care and storage of frozen fish.

Visit a supermarket and record the kinds and forms of poultry available. Include fresh, frozen, and canned. Note the prices of each type. Which type of poultry and which form is the least expensive? The most expensive?

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Prepare a chart detailing proper storage principles for poultry. How many days can poultry be stored in the refrigerator? Include this information in the chart as well as proper temperatures for storing fresh, frozen, and canned poultry.

Brainstorm to list as many convenience products as possible that are meat, fish, or poultry. Are these products used widely today? What factors make convenience products so acceptable?

Compare the expense per serving for preparing a fried chicken meal at home, purchasing a fried chicken dinner at a fast-food restaurant, and purchasing a frozen fried chicken dinner. Which would your family prefer? Which would cost the most? Which would cost the least? Which requires the least time? Would each of the three be a good buy in certain situations?

Define the major principles related to cooking meat, fish, and poultry. Example: cooking at low temperatures for the proper length of time to enhance the flavor, improve the color, destroy bacteria and harmful organisms, and make meat more tender.

Experiment by cooking four identical meat patties using the pan-broiling method. Cook two at a high temperature, one with seasoning and one without. Cook the other two patties at a low temperature, one with seasoning and one without. Examine the weight, size, moistness, and tenderness of each when cooked. What conclusion can you draw regarding shrinkage and flavor related to the cooking temperature?

Plan, prepare, and serve meats appropriate for breakfast, lunch, or dinner food labs. Choose other foods such as eggs, fruits and vegetables, quick breads, cereals, pastas, and simple desserts to complete the menus. Serve the foods attractively. Evaluate the results of your experiences.

Practice cooking meat, fish, or poultry at home using one of the dry-heat methods and one of the moist-heat methods. Select meat, fish, or poultry appropriate for a low-income budget. Share the results with the class.

Watch a demonstration on cutting up a chicken. Practice at home and share the results with the class. What is the difference in price per pound for whole chicken and cut-up chicken? When would each be a good buy?

5. Meat extenders

Brainstorm to identify foods that can be used in casserole recipes to extend meats. Include beans, spaghetti, rice, potatoes, macaroni, etc.

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

Discuss some advantages of using casseroles. Examples: Meat, vegetables, and sometimes bread are included in one dish; there may be enough food for two meals; casseroles can usually be prepared ahead of time and cooked just before serving, or reheated; casseroles are usually cooked in the oven and do not require attention during cooking.

Investigate the cost of various casserole dishes that extend meats. Select a casserole recipe and find out the cost of each ingredient. Total the costs and divide by the number of servings to find the cost per serving. Report the cost of this recipe to the class. What are some high-cost ingredients that would add to the cost per serving? Examples: nuts, olives, sour cream, etc.

Collect favorite casserole recipes from each class member's family. Compile a "Casserole Cookbook." [NOTE TO TEACHER: If the cost of duplicating is not prohibitive, these recipes might be presented to class members' families on some special occasion.]

Create recipes putting together ingredients often used in casseroles. Flavor with herbs and spices. Prepare the recipes in the foods laboratory. Evaluate the dishes prepared. How could each be changed or improved?

6. Nutritious desserts

Define the following terms: *compote, custard, ices, cobbler, dumplings, pudding, sherbet, flan, parfait, mousse, shortcake, ice cream,* and *frozen yogurt.*

Look for recipes using the above terms. Try to find unusual, simple desserts that are nutritious and not high in calories. Keep in mind the following dietary guidelines: Avoid too much fat; avoid too much sugar. Copy the recipes you think are the best examples of good nutrition and bring them to class. Discuss all the recipes, and vote on the best of the collection. Determine a winner in each of the following categories: milk dessert, fruit dessert, frozen dessert, biscuit dessert, and gelatin dessert.

Analyze the winning recipes in each category using a chart on the composition of foods. Which recipe is the most nutritious? Which has the least calories? Which would take the least time to prepare? Which would cost the least per serving? Which would appeal to children?

Brainstorm in small groups to suggest ways of adding nutrition to simple desserts. Example: Serve cheese with fruit.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Discuss the selection of simple desserts based on the foods already served in the meal. What nutrients need to be included? If the meal consisted of foods high in calories or sugar, the dessert should be simple and light. Example: If candied yams were served for dinner, the dessert might be a baked custard or a fruit compote with very little sugar.
	Study information sources on freezing desserts. What are the time limits on storing most frozen desserts? How long should ice cream be stored in the freezer? How long should cobbler or shortcake be kept frozen?
	Examine convenience dessert products available at your local supermarket. Look at the mixes such as puddings, gelatins, custards, and fruit pie fillings. Compare the cost of the mix with the cost of making the same dessert from scratch. Be sure to include the cost of milk or other ingredients that need to be added to the mix.
	Compare the cost per serving of ready-to-eat ice creams, ice milks, and sherbets to the cost of making the same products at home. Consider the amount of time required for preparation. Decide which product would be the best buy for your family and give reasons for your choice.
	Look for advertisements on new products that you have not tried. Bring an advertisement to class and discuss the possible nutritional contributions of the new product. Watch for new products to appear in the supermarket. Check the nutrition label and the price to decide if the new products would be a good buy.
	Study resources for information on preparation of simple desserts. Include milk desserts, fruit desserts, frozen desserts, gelatin desserts, and biscuit desserts.
	Plan, prepare, and serve appropriate desserts for the menus chosen for lunch, dinner, and snack foods labs. Be sure the dessert chosen adds variety and nutrition to the menu. [NOTE TO TEACHER: Encourage students to select different desserts for each lab.] Evaluate the desserts prepared.
7. Beverages	Identify terms related to beverage preparation. Examples: *caffeine, steep, stimulant, percolate, vacuum method, tannin, cocoa, chocolate, etc.*
	List types of beverages served alone and with meals. Include coffee, tea, milk, chocolate milk, cocoa, juices, water, and soft drinks.

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

Analyze the list of beverages and determine which are the most nutritious. Which beverages are consumed for their stimulant effect? Which ones have the highest caloric content? To which are extra calories often added through use of sugar or cream? Which ones provide the most vitamins and minerals?

Examine the role of beverages in providing the daily needs for liquids. How much liquid is recommended? How does the need for liquid change with temperature and activity level?

Read resources on the selection, care, and storage of beverages. Develop a class "Beverage Tips" sheet incorporating information gained from the readings.

Identify what is wrong with the following statements on beverage storage, and make recommendations for correcting them: 1) Mix frozen orange juice with boiling water to thaw. 2) Store coffee with the lid off to give the kitchen a pleasant aroma. 3) Grapefruit juice may be stored in the refrigerator without a lid. 4) Milk drinks will have a better flavor if stored in the refrigerator for six days or longer.

Look for recipes to prepare a convenience cocoa mix and spiced tea mix at home. Investigate the cost of ingredients and compare the cost per serving of the homemade mix to a ready-to-use mix. Prepare the mix your family would enjoy.

Survey the selection of convenience coffees, teas, and cocoas at your local supermarket. Is there a wide selection? How do the prices of "instant" products compare with the prices of regular beverage products?

Study the principles of preparation for various beverages. Prepare a demonstration of one method for preparing and serving coffee either hot or cold. Observe other student demonstrations and evaluate the resulting products.

Prepare tea using loose tea leaves, tea bags, and instant tea. Evaluate the color, aroma, flavor, and appearance of each. Serve both hot and cold.

Test some recipes for milk-based snack drinks. How did you like the drinks? Would you prefer them over soft drinks?

COMPETENCY: *Ability to preserve food for future use*

SUB-COMPETENCIES: *Identify methods of food preservation.*

Identify food preservatives.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
F. Food Preservation and Processing	Brainstorm to identify the types of food preservation. Include canning, freezing, drying, smoking, etc.
	Study commercially prepared foods. Identify ways these foods are preserved. List preservatives that may be added during processing.
	Identify reasons for preserving food, such as storing food to be used at a later time, keeping food fresh, and being able to enjoy out-of-season foods year-round.
	View films, filmstrips, or booklets on commercial and home food preservation.
	Observe a display of home canned foods. Discuss the procedures for canning acid and non-acid foods. Discuss the methods used to can foods. What foods can be canned by each method?
	Observe a demonstration by a county extension agent on techniques used in preparing food for the home freezer. Provide freezer wrap paper for practice of the "butcher wrap" and "drugstore wrap."
	View a demonstration on drying food. Prepare a tray of Thompson seedless grapes and place in a sunny location. Allow to dry four to five days, stirring occasionally. How did your drying experiment turn out? Did you like the taste of the raisins?
	Conduct a "Smoked Foods Tasting" session. Provide as many smoked food products for tasting as possible. Cut foods in very small cubes or slices. Allow each student three "favorite" votes and one "least favorite" vote. Count all the votes and determine what the favorite smoked foods are and what the least favorite is.

COMPETENCY: *Ability to analyze career and job opportunities*

SUB-COMPETENCIES:

Identify entry-level jobs in food and nutrition.

Relate food and nutrition skills to other occupations.

Determine how nutrition affects job success.

CONCEPTS

G. Relating Food and Nutrition Skills to Jobs
   1. Entry-level jobs

LEARNING AND EVALUATION EXPERIENCES

Look up resources at the library on projections for workers needed in the food service industry now and in the next 10 years. What factors are causing these increases?

Invite a panel of HECE or PELE students employed in food service jobs to present a discussion on job opportunities. Ask questions about job responsibilities of entry-level food service employees. Visit the PELE laboratory or training stations to see students at work.

Investigate the opportunities for advancement in the food service industry. Obtain information from readings or from personal interviews with people employed in food service jobs.

Identify qualities that would contribute to employability and advancement in food- and nutrition-related jobs.

Survey your community for specific job opportunities in food service at the entry level. Scan the yellow pages and want ads to find places of possible employment.

List the number of food specialty shops (ice cream, bakery, doughnut, candy, etc.) in your locale that might employ entry-level persons for counter work. Determine what their employee turnover rate is, if possible.

Estimate the number of dishwasher jobs available in restaurants. Would you consider starting in a job as dishwasher if there were advancement possibilities? Why or why not?

Read references to identify job responsibilities of bus help in restaurants. What advancement opportunities might be anticipated from this job?

Interview a waiter or waitress to find out how they started. Did they have any experience that helped them, such as working as bus help? How long have they been employed? Do they think the pay is adequate?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	View Transparency 25, "Career Ladder," to gain an understanding of how persons move up or advance in careers. Discuss.
2. Application of skills to occupations	Investigate career opportunities related to food and nutrition, such as product managers, butchers, supermarket managers, sales representatives for food companies, food brokers, fish farmers, etc. How can knowledge gained in food and nutrition be useful to persons in these occupations?
3. Effects of nutrition on job success	Brainstorm to identify ways nutrition affects the way we feel and perform. How can skipping breakfast affect job performance? How can eating habits contribute to highs and lows in job performance? How may nutrition be related to time off the job? How may fad diets or poor eating habits affect job performance? How may snacking habits affect job performance? What nutritious foods can the employee choose for lunches and snacks?

HOMEMAKING II
FOOD AND NUTRITION

COMPETENCY: *Ability to plan nutritious meals and snacks.*

SUB-COMPETENCIES:

Determine nutritional requirements of infants and children.

Plan nutritious snacks and meals for teens.

Recognize the effect of individual differences on food requirements of adults.

Identify nutritional requirements of the elderly.

Explain the importance of good nutrition during pregnancy.

Indicate specific nutritional requirements of nursing mothers.

Analyze the importance of proper diets in relation to specific illnesses.

CONCEPTS

A. Planning Nutrition for All Family Members
   1. Nutrient needs of family members

LEARNING AND EVALUATION EXPERIENCES

Review the six classes of nutrients. Study a chart of the Recommended Daily Allowances of nutrients for various age groups. How do sex and body size influence nutrient needs? Why do children need more of some nutrients than adults? How do the nutrient needs of pregnant women and nursing mothers differ from the nutrient needs of other adult females? How can a family be sure that each family member is getting the nutrients he or she needs?

Study resources describing the functions of various nutrients. Which nutrients must work together for proper body functioning? What are the major sources of each nutrient? How can you be sure your body is getting the right combination of nutrients? What problems can result from under- or over-nutrition?

Conduct lab experiments to test for the nutrients present in various foods. Use appropriate tests for finding starch, sugar, protein, fats, minerals, and vitamin C. [NOTE TO TEACHER: These tests are described on page 23 of *The New Nutrition,* Teacher's Guide.]

Find nutrition news on television, in newspapers, in magazines, etc. Post information about the nutrition news on a bulletin board. Evaluate the accuracy of the nutrition information. Try to become aware of the type and amount of nutrition information and misinformation being disseminated through the media. How can you determine if a source is reliable?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Plan breakfast, lunch, dinner, and snack menus to meet the nutritional needs of a typical family. Include foods featured in the food preparation unit (appetizers; cheese and milk products; soups and sauces; yeast breads; salads; meats, poultry, fish; cakes and frostings).
a. Infants and children	Invite a panel of new mothers to discuss advantages and disadvantages of breast feeding and formula feeding. Ask questions about the time involved in each method of feeding, the cost of equipment and supplies, and the reasons for choosing one method over the other.
	Study the nutritional aspects of breast feeding vs. bottle feeding. Is there a nutritional advantage of one method over the other? What effect does the mother's food intake have on the quality of breast milk?
	Investigate and compare the nutrition and cost of a home prepared baby formula to a commerical product. Is there a difference in nutrition? Figure the cost of commercial formula for feeding an infant for six months. Figure the cost of a home prepared formula for the same period of time. What is the difference in cost? Estimate the amount of time that would be saved by using the commercial formula instead of the home prepared formula.
	Study resources to determine when and how solid foods should be introduced to infants. Why is it a good idea to introduce only one food at a time?
	Examine a display of commercially prepared baby foods including cereals, canned vegetables, fruits, and meats in regular and junior consistencies. Note the cost of the various items and estimate the cost per week of feeding an infant these commercially prepared products.
	Discuss safety and sanitation factors related to serving baby food. Examples: Remove a serving from the jar for heating at mealtime; if all the serving is not consumed, cover the dish and store in the refrigerator; if the food is not eaten in 24 hours, it should be discarded; do not heat the entire jar of food or serve out of the jar unless the baby will eat all the food in the jar at one meal. These measures will protect infants from contaminated food.
	Analyze the following statement: "Pure forms of commercially prepared baby foods are preferable to mixed dinners or vegetables." Why do you think this is a true statement?
	Demonstrate preparing infant foods at home using a blender. What would be the advantages in preparing the food at home? Do you think the infant would receive

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

a balanced diet? Include in the demonstration some time-saving tips such as preparing more than enough for a meal at one time and freezing small portions. Ice cube trays might be used to freeze small portions which could be easily removed and stored in freezer bags. The small portions will thaw quickly and can be easily heated to serving temperature.

Compare the cost and taste of commercially prepared baby food to the cost of baby food prepared at home. Select one item, such as spinach, and determine the cost per tablespoon for the commercial product. Cook one package of frozen spinach and blend to puree. (Do not add salt). Measure the number of tablespoons and figure the cost. Cook one package of fresh spinach and blend to puree. Measure the yield in tablespoons and figure the cost. Present the results of your investigation in chart form to the class.

Examine the label of a multivitamin for young children. Compare the amounts of nutrients in the recommended daily dosage of the multivitamin to the Recommended Daily Dietary Allowances for the same age group of young children.

View a film on food for young children. From children's point of view, what role does food play in their lives? What factors influence their food likes and dislikes? What can be done to make food more appealing to young children?

Develop a nutrition lesson for a primary school age child. Use hand puppets, marionettes, or colorful pictures which would appeal to children.

Plan and prepare a picnic for children using foods featured in the food preparation unit. Study references or interview child care workers to determine foods that would be appropriate. Review the recommended daily allowances for the age group and make plans for a nutritious, attractive, and acceptable picnic.

b. Teens

Study the recommended daily allowances (RDAs) for teenagers. Note the differences in recommended amounts for males and females in the same age groups. Note which nutrients have similar recommendations for both females and males. Which nutrients remain the same in required amount from age 11 throughout the lifetime of males? Which nutrients remain the same for females from age 11 throughout life?

Analyze the following day's nutrition for a 16-year-old female. Breakfast–doughnut and coffee; midmorning snack–brownie and cola; lunch–hamburger, potato chips, cola; after-school snack–candy bar; dinner–meat, potatoes, pie, and cola; late snack–cola and potato

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	chips. What is missing in this diet? Figure the approximate calorie content. Are the calories high in proportion to the nutrient content? Keep a record of everything you eat or drink for one week. Record the amount consumed, when consumed, and list ingredients of food combinations. Compare the amount of foods consumed in each food group with the recommended number of servings needed by teenagers each day. Using a composition of foods table, determine the number of calories consumed each day. Also determine whether the recommended amounts of vitamins and minerals were included in the day's diet. Predict the health hazards of several years of unwise breakfast and lunch habits. What are some complications of pregnancy related to poor nutrition during teen years? Study references related to the nutritional needs of athletes. Which nutrients do athletes need to provide the extra energy they require? Plan a menu for one day for a tennis player who burns 1000 calories more than her RDA. Discuss the best time for these extra calories to be consumed. Brainstorm to identify some myths about food and athletic performance. Based on your knowledge of nutrition, explain why these myths are false. Discuss the danger of extreme dieting during the growth years. Examples: anorexia nervosa, liquid protein diets, etc. Adolescent girls require about 20 percent less calories than adolescent boys due to lower activity level. However the amount of nutrients required is essentially the same for both boys and girls. What would this mean in planning meals for girls?
c. Adults	Look up the recommended calorie intake for adult women and men. Note that the recommendations change with age and that men always require about 20 percent more than women in the same age group. Discuss why there is a difference. Discuss ways to allow for this difference in calorie needs in planning family meals. Study references on activity levels and the calories required for energy. Design a menu plan for a day based on activity level and calorie requirements for an adult that you know. Include a profile of information on height, age, sex, weight, and activities. Take into account any health problems such as diabetes, heart disease, and obesity that may require special food.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Listen to a dietitian from a local hospital discuss current health problems which most often affect the adult population in the United States. Include heart attacks, strokes, ulcers, etc. How is diet related to these problems? What are some dietary recommendations for prevention and/or control of these problems?
	View Transparency 17 on weight control. Discuss the difficulty of controlling weight through activity alone.
d. Elderly	Interview grandparents or other older persons to determine their dietary problems. Plan a day's menu which would meet their caloric and nutrition needs.
	Plan a menu for an elderly person who has no teeth. Include foods which would provide about one-fourth of the caloric needs and be easily digested.
	Study resources to determine reasons for poor nutrition among the elderly. Include physical handicaps, low energy level, reduced appetite, loneliness, limited income, etc. Discuss possible solutions in class.
	Invite the local representative for Meals on Wheels or another program that feeds elderly people to discuss their program with the class. Ask questions regarding participant costs, eligibility requirements, problems with getting volunteer help, etc. Encourage classmates to get involved with these programs if the opportunity arises.
	Volunteer to help serve meals at a local nursing home. Note the kinds of foods served and the methods of preparation used. Do the patients seem to enjoy the food? What could make mealtime more pleasant and enjoyable?
2. Special needs a. Pregnancy	Look up the RDA's for pregnant women. What additional amounts of each nutrient are required? How many additional calories are recommended? Prepare a chart showing the daily requirements.
	Suggest some menus that would incorporate the additional nutrients needed by pregnant women but would not contribute an excessive number of additional calories.
	Study references to determine what dangers might be encountered if dieting to lose weight is undertaken while pregnant. Why should the mother-to-be's doctor be consulted?
	Fluid retention is sometimes a problem, especially during the last trimester of pregnancy. When this problem arises the expectant mother may be required to lower salt

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	intake to assist in controlling the condition. List foods that should be avoided when controlling salt intake. Examples: pickles, ham, ketchup, soy sauce, sauerkraut. Read some current articles on "hidden sodium." Labels must include salt as an ingredient when salt is used, but the amount of salt in the product need not be revealed. *Consumer Reports* research shows many foods, such as corn flakes, white bread, and pudding mixes, contain more sodium than foods such as salted peanuts, potato chips, and bacon. Sometimes even drinking water can be high in sodium. Give a brief report to the class on your readings concerning hidden sodium. Leg cramps can be a sign of low levels of calcium. Plan menus which would include more calcium to assist in controlling this problem.
b. Nursing mothers	Review RDA's for nursing mothers. What additional nutrients are needed? Generally, nursing mothers may consume about 500 extra calories per day without weight gain. Using this information, plan a day's menus for a nursing mother using nutritious foods to add the extra nutrients and calories. Avoid using desserts or high calorie snack foods. Study the recommended liquid intake for nursing mothers. Using the general rule that three quarts of fluid per day is needed to keep the milk supply constant, make a plan for including this much liquid in the daily diet. How much liquid would be needed each hour? Interview some nursing mothers regarding their diets. Ask questions about what kinds of foods they eat, what problems related to food they may have encountered, how much liquid they drink, and whether or not they take vitamins. If they are taking a multivitamin, is it because their doctors require it? Research the advantages and disadvantages (time, work involved, cost) of breast feeding infants. Research the advantages and disadvantages of formula feeding. Compare your lists and discuss how to make an intelligent choice based on facts and individual situations.
c. Illnesses	Many illnesses or conditions require special diets. Brainstorm to compose a class list of illnesses you know of which may require a special diet. Examples: ulcers, diabetes, hypoglycemia, heart disease, etc. Invite a hospital dietitian to discuss therapuetic diets and how the hospital handles special diets. Does the hospital have a training program for parents on special diets? Where can patients get reliable diet information if the hospital or doctor does not provide it?

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

Read articles or books related to the theory of the effects of food on migraine headaches. Report your findings to the class.

Study dietary requirements for controlling cholesterol levels. Plan a day's menus for this diet.

Discuss food allergies in class. What are some symptoms of food allergies? How can positive determination of food allergies be made? What alternatives does one have once food allergies have been diagnosed?

Invite a member of the local American Diabetes Association to speak to the class. What services are available? Ask questions regarding adult onset diabetes, food exchanges, medications, etc.

Study articles relating various foods, such as bacon, coffee, sugar, artificial sweetners, and salt, to various illnesses. Does it appear that the media sometimes causes a premature scare in warning consumers about dangers in foods? What are the pros and cons of such warnings? What choices do consumers have?

COMPETENCIES:

Ability to manage family meals

Ability to serve foods attractively

SUB-COMPETENCIES:

Utilize casual styles of service appropriate for family meals.

Plan food and service for informal entertaining.

Utilize practical etiquette in family meals and informal entertaining.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
B. Family Meal Management 1. Casual styles of service	Study references on casual or informal styles of meal service including plate service, family service, modified English service, compromise service, and buffet service.
	Discuss factors that determine style of service, such as location, budget, convenience, available equipment, time, energy, and goals.
	Participate in demonstrations of setting the table for each style of casual service. Discuss each setting and when its use would be most appropriate.
	View Transparency 19 on "Buffet Setting." What types of foods are best for buffet service? What are the options for placing flatware and napkins when using buffet service?
	Prepare menus for several different kinds of meals ranging from hamburger cookouts to holiday meals. Write each menu on an index card and include "situation" information such as the number of people to be served, etc. Place cards in a box. Each student draws a card and decides which style of casual meal service would be most appropriate considering the menu and the situation. Tell the class about your menu and situation and reveal your choice of meal service style. Give reasons for your decision.
	Which style of casual meal service is the most elegant and likely to be used for special occasions? Which style is the simplest?
	Survey the class members to determine which type of meal service is most often used by their families. How many families regularly use more than one style of meal service? Do any families of class members use all five informal styles on different occasions? What are the advantages of being able to use more than one style of meal service?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Bring pictures of various table settings from magazines. Try to decide from the way each table is set what style of meal service would be used.
	View a film or filmstrip on meal service. Discuss the points emphasized by the film. Can you think of other points which could have been included?
2. Entertaining informally	View a film or filmstrip on entertaining. Discuss the information presented. Can you think of aspects of planning not mentioned in the film/filmstrip which are important to entertaining?
	How can entertaining be done economically? What are some ways to cut costs?
	Develop a class check list or form which could be used to assist in planning a party. Include date and time; guest list and invitation; menu shopping list; special needs such as chairs, tables, etc.; room arrangements; preparation schedule; decorations; entertainment plans such as games or records; and space for comments or evaluation after the party.
	Discuss factors to be considered when planning a party. Are they similar to factors which determine the style of meal service? Include factors such as family approval, date and time, amount of money to be spent, type of entertainment, area of home to be used for entertaining, list of guests, type of food to be served, etc.
	Write an invitation to a party. Exchange with a classmate and evaluate. Does the invitation specify what, why, when, where, and who about the party? Would you need any additional information in order to attend?
	Work in groups to plan the theme, menu, and decorations for an assigned type of party. [NOTE TO TEACHER: Types of parties might include birthday for a child, birthday of a friend, parents' anniversary, after-the-game party, etc.] Report your solution to the class and listen to the other groups' reports. Vote on which party sounds like the most fun.
	Discuss entertaining an unexpected guest. What food supplies might be kept on hand that could be prepared quickly? Would it be appropriate for the guest to be asked to help with the preparation in this situation?
	Develop a bulletin board of party ideas such as Tailgate Picnics or a Super Bowl Party. Develop menu suggestions for each party idea.
	Discuss in class the best party you have ever attended. What made it "best"? Was it people, food, atmosphere,

or a combination of these that made this party so special? Have you ever given a party on your own? How would you rate your party on a scale of 1 to 10? What could have made it better?

As an FHA/HERO project, plan and give a party for potential FHA/HERO members or for school faculty during National Education Week or National Vocational Education Week. Use the skills learned in class.

3. Practical etiquette

Define *practical etiquette.* Share your ideas and compose a class definition.

Evaluate your own table manners and write down weaknesses along with a plan for improvement.

Role play situations involving table manners. Examples: Your parent's employer is a guest; a girlfriend or boyfriend visits for a first meal; younger brother and sister argue or tease at the table, etc. Audience may offer suggestions for improving each situation as depicted.

Develop a list of topics which should not be discussed during mealtime. Share with the class. Discuss why certain topics should be avoided.

Look up the definition of R.S.V.P. What should you do if you receive a party invitation that requests an R.S.V.P.?

Practice, with classmates, the proper way to make introductions until you are confident. Introducing guests at parties is important and should be handled with ease.

Study references to determine the proper use of flatware and where it should be placed after use. Do all the references agree? Can there be more than one "correct" way of using flatware?

COMPETENCY: *Ability to apply consumer skills to food buying*

SUB-COMPETENCIES:

Identify new trends in shopping which can affect family food costs.

Recognize government agencies which regulate business or agriculture, or protect consumers.

Analyze the role of advertising on family food purchases.

Identify industrial developments that affect the family food supply.

Plan low-cost family meals.

Utilize weekly menu plans.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
C. Consumer Aspects of Food 1. Shopping trends a. Co-ops	Research current magazines to find articles on food cooperatives. Write a definition based on your readings. Discuss the advantages and disadvantages of belonging to a food cooperative. Invite a co-op member (or former member) to speak to the class regarding how co-ops are set up. [NOTE TO TEACHER: In small towns there may not be opportunities for purchasing food from a wholesale grocer.]
b. Generic foods	Look at some generic foods, some store brand foods, and some national brand foods. What are the differences for generic, store brand, and national labels? Obtain three cans of peach halves for comparison. One should be a national brand, one a store brand, and one generic. Record the number of ounces contained in each can, and the price. Open the cans, measure the amount of liquid in each can, and record. Then compare the number of peach halves and the color, taste, and appearance of each product. What conclusions can you make based on this comparison? Which product is the best buy? [NOTE TO TEACHER: This could be conducted as a "blind" experiment, if desired, by covering the labels or removing them and assigning a number to each can.] Read references or magazine articles on generic foods (see *Changing Times*, December, 1978, pp. 36-38). What is the major difference for generic and national brands? Is the generic product always consistent in quality?
c. Refunds and coupons	Interview persons you know who shop for food regularly. Ask if they use coupons or obtain refunds. How

frequently do they use coupons? Ask for an estimate of how much money they save by using coupons or obtaining refunds. Share information with the class.

Read grocery advertisements in local newspapers to determine if stores offer double or triple value on coupons on certain days of the week. How many stores are participating in this type promotion?

Discuss the sources of coupons. Where do people get them? Look for coupons in magazines and newspapers. Add the value of all the coupons you find in one source. What is the total value? How many coupons are for products you or your family regularly use?

Determine if there is any type of coupon exchange provided by stores or organizations in your area. If none is available, an exchange might be undertaken as a community service by FHA/HERO members.

Bring to class all the articles you can find in current publications on coupons and refunds. Use the articles to prepare a bulletin board or collage.

Research to find statistics on the amount of time spent and the amount of money saved or earned by persons who use coupons and obtain refunds as a hobby. What would the average per hour earnings be? Would this be a method of saving that you might utilize?

Define and find examples of the following refunding terms: *expiration date, mail-in certificate, no limit, order all you want, proof of purchase (POP), qualifier, refund form, send a self-addressed envelope, (SASE), store special, universal product code.*

Send for a refund on some food product and keep a record of the cost involved and time spent. Record the date of the refund request and when you receive the refund. How long did it take? Was it worth the time, effort, and cost? Will you send for more refunds in the future?

d. Redemption stamps

Determine how many kinds of redemption stamps are available in your area. Do merchants offer "double" stamps on certain days?

Draw up a list of 20 staple grocery items that a family might purchase regularly. Volunteer to make a price check in the store where your family shops most frequently. [NOTE TO TEACHER: A time limit of one week might be imposed on this project or price changes may affect the results.] Compare the prices on each item

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	from the different stores. Add the total bill and see which store has the best price for the entire 20 items. Is the store one that gives stamps? Do you see a relationship between prices and redemption stamps?
	Obtain a stamp redemption catalog and compare prices of three to five items against the price of the same items purchased in a store. Prices could be from a department store and a discount store. Ask a stamp redemption center what the current cash value is for a book of stamps; then figure the price for the designated items at the stamp store. Is the redemption price higher or lower than the department store price? The discount store price? What are your conclusions?
e. Bartering	Discuss the term *bartering* and compose a class definition. Do you know if any bartering groups exist in your community?
	Invite a member of a food bartering group to explain this method of saving on food costs to the class. [NOTE TO TEACHER: If this method of exchange is not used in your community, free information is available from Barter Project, c/o Volunteer, National Center for Citizen Involvement, 1215 Sixteenth Street N. W., Washington, D.C. 10036.]
2. Factors affecting the consumer a. Business and agriculture	Discuss factors which affect food prices. Include: farm expenses, crop size, weather conditions, processing, transportation, marketing, advertising, storage, government regulations, shoplifting, etc.
	Find a current example of the law of supply and demand and its effect on food prices. Share your example with the class.
	Develop and perform skits or charades which depict some "hidden" aspects of food cost. Other students try to detect the "hidden" cost. Include store energy costs, especially air conditioning and refrigeration; shoplifting; carry-out-service; check cashing service; twenty-four-hour operation; and redemption stamps. How can consumers help reduce the cost of food?
b. Government agencies	Study references to become familiar with government agencies involved with the consumer aspects of food. Include the United States Department of Agriculture (USDA), Federal Drug Administration (FDA), and the Federal Trade Commission (FTC). What are the major responsibilities of these agencies regarding the nation's food supply?
	Identify some consumer protection agencies and learn more about the rights of consumers by sending for the

free booklet: Consumer Resource Handbook, Consumer Resource Center, Department 635H, Pueblo, Colorado 81009.

Invite a speaker from a local consumer protection agency to tell the class what kinds of problems the agency can handle or assist with. Ask questions regarding how to file a complaint.

Pretend that you have purchased a can of beans which contains a rock. Write a letter of complaint to the manufacturer explaining your problem and what you expect the manufacturer to do. Include all the facts concerning the product, where and when it was purchased, the price paid, and the label, if possible, or date information from the label. Make your letter polite, factual, and your request for settlement reasonable but firm.

Research your own community to determine what county, state, and federal agencies provide nutrition and food assistance to individuals and families. Compile a list of the agencies and their services.

c. Advertising

Collect samples of food advertising from newspapers and magazines or tape record food advertisements from radio or television. Analyze the advertisements for accuracy of the information provided, emphasis of the appeal, and amount of information given. Which ads would encourage you to try the product? Would any of the ads "turn you off" to the point of your deliberately avoiding the product?

Conduct a study of advertising aimed at children. Designate groups to watch different channels of Saturday morning television from 9 a.m. to 11 a.m. Record the number of food advertisements and the products mentioned. What kind of appeals did the ads employ? How many food ads were reported from each channel during the two-hour period?

Divide the class into two groups and conduct a debate on "Limiting Food Advertising on Children's Television Programs."

Survey the class to determine how teenagers are influenced by advertising. Develop a check list of five food items frequently purchased by teens. List brands for each of the food items. Ask why individuals selected one brand over another, how they heard about the product, or if they were influenced to buy the product by advertising. If advertising was the source of information, what kind of advertisement was it? Radio? Television? Newspaper? Other? What kind of appeal was utilized?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Write one-minute ads on any food product using information about advertising. Videotape or tape record the ads to play back for the class to evaluate.
d. Industrial developments	Develop a chart of food products in use today that were not on the market five years ago. Students may need to interview parents, grocers, or other adults for suggestions. What factors caused these food products to be developed?
	Invite a food industry representative to discuss industry changes and future plans with students. Ask about the development of food substitutes, vegetable proteins, additives and supplements, and meat analogs.
3. Family food budget a. Low cost meals	Brainstorm in small groups to determine ways of planning low cost meals. Include such things as using meat extenders, dried beans, eggs, and cheese in main dishes. Compare your suggestions with those of other groups. Compile a class list of the best suggestions. What effects would your suggestions have on the nutritive values of the meals?
	Explain how the following practices can affect the amount of money spent on food: impulse buying, purchase of nonfood items, shopping when hungry, shopping without a list, buying convenience foods only, shopping with children, and eating out. Why should the consumer be aware of these effects?
	Volunteer to prepare a chart showing seasonal foods and their available dates in your community. You may wish to interview a produce manager for a local supermarket or a representative of a produce wholesaler to obtain specific and accurate information. Present your chart to the class. Explain how buying foods in season can reduce food costs.
	Prepare a low cost nutritious meal plan for your family. Do the shopping, and help prepare the meal. Keep a record of cost per person for the meal. Share with the class and compare costs to determine which class member prepared the lowest cost meal. How would increasing the use of dried beans and peas affect the family's food bills?
b. Weekly menu plans	Study references regarding planning weekly menus. Discuss the advantages of planning meals for a week or two in advance.
	Bring newspapers containing grocery advertisements to class and practice planning a week's menu for two people using groceries on special. Utilize the less expensive cuts or types of meat, meat extenders or substitutes, etc. Use more than one advertisement if necessary to achieve

the desired variety and low cost. Figure the cost of the food from the prices in the advertisement. Compare with classmates to see who "spent" the most money and who "spent" the least money.

Plan a weekly menu for your family. Develop a shopping list for the menu. If possible, purchase the items on the shopping list utilizing the techniques studied in this unit. Report the results to the class.

COMPETENCY: *Ability to utilize basic skills in kitchen planning and management*

SUB-COMPETENCIES: *Recognize the importance of pest control in the home.*

Identify and evaluate kitchen work areas for efficient family meal preparation.

Demonstrate proper selection, use, and care of small equipment.

Identify effective equipment substitutions.

CONCEPTS — **LEARNING AND EVALUATION EXPERIENCES**

D. Basic Kitchen Skills
   1. Pest control

Discuss the need for controlling pests in the home. Why are pests undesirable? What diseases and food-borne illnesses are carried by insects and rodents?

Study resources to determine how ants, flies, roaches, rats, and mice transmit disease. Prepare a chart summarizing the information you found.

Invite a pest control professional to visit the class and discuss costs and services provided by pest control companies. Ask questions regarding what products they use, the safety precautions needed when using pest control chemicals, and what could be done to prevent pests in the home without the aid of professionals?

View a film on the basic rules of sanitation, food storage, handling potentially hazardous chemicals, and controlling pests.

Brainstorm in small groups to determine ways to store different kinds of food products to lessen the risk of contamination. Share your suggestions with the class.

2. Planning Work Areas
   a. Arrangements

Bring to class illustrations of various kitchen arrangements. Select the example that best illustrates each of the following: U-shaped, L-shaped, parallel wall, one wall, and island. Note placement of major pieces of equipment in each kitchen shape.

Work in groups to evaluate the features of a specific kitchen shape. Explain reasons for the location of the following specific work areas: food storage and preparation center, cooking and serving center, and cleaning center.

Examine floor plans of various shapes of kitchens. Determine the work triangle dimensions. Which plan offers the best arrangement? Which plan depicts the least workable arrangement? How does the size and shape of the work triangle affect the amount of energy used in food preparation?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
b. Evaluating space	Draw the kitchen in your home on graph paper using a scale of one inch for one foot. Indicate the location and size of the major equipment and work areas. Draw in the work triangle and measure. How does the kitchen's work triangle compare to the recommended dimensions for a kitchen of that shape?
	Look at the use of the various work centers of your kitchen? Are you using the shape to the best advantage? Could rearrangement of storage or use areas achieve a more efficient flow of tasks? Save energy? Write down your suggestions for improving your kitchen.
	Plan ways to change the location and organization of work areas to increase usefulness and efficiency. Develop a check list for evaluating the work space.
	Work in groups to plan inexpensive ways to make a kitchen more efficient without major remodeling. Examples: If there is not any counter space by the refrigerator, use a small cart with wheels; step shelves may be added to cabinets by covering styrofoam with shelf paper. Step shelves are particularly good for spices and canned goods.
3. Selection of small equipment a. Cookware materials	Study resources to determine the characteristics of various materials used in the construction of cookware. Include aluminum, stainless steel, iron, glass, glass-ceramic, enamel, and copper.
	Prepare a class chart depicting the advantages and disadvantages of each type of material used in the construction of cookware. Information on heat conduction, hot spots, ease of care, durability, and cost should be included. What factors affect the amount of energy needed to cook food in the various types of cookware?
	View a display of the cookware in the lab kitchens. How many kinds of materials can you identify correctly?
	Select one saucepan made of aluminum, one of stainless steel, and one of glass-ceramic material. Coat the bottom of each pan with shortening and flour. Place the three pans on elements of the same size and set the temperature on medium heat. Observe and record which pan shows the shortest heating time, which browns the flour the most evenly, and which pan develops hot spots.
b. Construction of cookware	Examine cookware in the lab kitchens and identify various construction techniques. Pay particular attention to the way handles are attached, the fit of lids, curves and seams that could cause difficulty in cleaning, beaded edges, and knobs on lids.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Study resources to determine the kinds of finishes and coatings used on cookware. What are the advantages of finishes and coatings? Does the finish or coating enhance the use of the pan, or is the finish applied only for "looks"?
c. Cutlery construction and materials	Discuss the differences in knives made of high carbon stainless steel, tungsten carbide, and vanadium steel. What are the advantages of each type material?
	Watch a teacher demonstration of the proper way to sharpen kitchen knives using a sharpening wheel, an electric sharpener, and an oilstone. Why is it important to keep knives sharp?
	Describe proper methods for storing knives to prevent damage and accidents. Describe proper methods for washing and drying knives to prevent accidents.
	View Transparency 26 on "Knife Construction." Why is it important that the tang extend the full length of the handle?
	Examine knives in the lab kitchens to determine the grind of the blades. Which grind is the sharpest? Which is the strongest?
	Examine a knife with a serrated edge. What advantage does this type of edge provide?
d. Food processors	Watch a demonstration of a food processor. How many different jobs can the food processor perform? [NOTE TO TEACHER: Demonstrations should include slicing, chopping, shredding, grinding, grating, mixing, and proper cleaning methods.]
	Examine several food processors or brochures from several manufacturers, and compare the features. How many operate at more than one speed? How many disks are available with each model? Which model appears to be the easiest to clean? How many food processors are a combination appliance? What other appliances are combined or use the same motor? What energy saving features are available? How can you compare the energy used by the different models? What safety features does the food processor provide? What safety precautions should the user observe?
	View Transparency 27 on "Food Processor Parts" to become familiar with the various parts of the food processor. If a processor is available in the lab, practice taking it apart and putting it back together. What precautions should be taken when handling the blades?
e. Mixers	Collect information on portable mixers and free-standing mixers. How many speeds does each type have? Can portable mixers do the same jobs as free-standing models? What are the advantages of each type mixer?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Participate in a comparison test of a portable mixer and a table mixer by preparing the same recipe for a confectioners sugar frosting in both mixers. Record the amount of time each mixer required to produce an acceptable frosting. Estimate the amount of effort and time used by the operator of each type mixer in preparing the mixer for use, preparing the frosting, and cleaning up the mixer. If you only had one mixer, would you prefer to have a portable or a table model? What features should you look for if you want to save energy?
f. Blenders	Read a use and care booklet on a blender. What kinds of jobs can a blender perform? What are some jobs that a blender cannot perform? What factors affect the energy used by a blender?
	Demonstrate the operation of a blender for the class. Prepare bread crumbs, mix frozen juice, grate carrots, mix salad dressing, peanut butter, etc. Show the clean-up technique of putting warm water and detergent in the container, blending for a few seconds, then rinsing and draining.
g. Equipment substitution	Discuss jobs that may be performed by more than one piece of equipment. Examples: Cabbage or carrots could be grated in a blender, in a food processor, or with a hand grater; batters can be mixed in a blender, with a mixer, or by hand. Compare the amount of energy used by each method.
	Interview homemakers to determine which small equipment they have and which they use most often. Do they have any equiment which is not used at all? Why not? Is it possible to have too much equipment? Consider storage facilities and amount of effort required to get out and put away small equipment. Compile the results of your survey to see if people generally like to use the same types of small equipment.

COMPETENCY: *Ability to prepare a variety of foods*

SUB-COMPETENCIES: *Prepare a variety of nutritious appetizers and garnishes.*

Apply knowledge of nutrition to the selection of condiments.

Apply knowledge of nutrition and food preparation to selection, storage, and cooking of cheese and milk for family meals.

Apply knowledge of nutrition and food preparation to selection, storage, and cooking of soups and sauces for family meals.

Apply knowledge of nutrition and food preparation to selection, storage, and baking of yeast breads for family meals.

Apply knowledge of nutrition and food preparation to salads for family meals.

Apply knowledge of nutrition and food preparation to selection, storage, and preparation of meats, fish, and poultry for family meals.

Apply knowledge of nutrition and food preparation to cakes and frostings for family meals.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
E. Food Preparation 1. Simple appetizers, garnishes, and condiments a. Terms	Look up definitions of the words *appetizer, garnish,* and *condiment.* Discuss in class and compile a list of foods which can be used as appetizers, garnishes, and condiments. Prepare a bulletin board of magazine pictures of appetizers, garnishes, and condiments.
b. Nutritional contributions	Study resources to determine the salt content of frequently used condiments. Since one of the dietary guidelines is "avoid too much sodium," what deductions can be made regarding the use of many condiments? Identify the nutritional contributions from garnishes made of fresh fruits and vegetables. Are garnishes generally eaten or left on the plate? Evaluate the nutritional contribution of the following appetizers: deviled eggs, bean dip, sour cream dip, vegetable relish tray, beef broth, cheese soup, and tomato juice. Would any of these appetizers be high in sodium or calories?
c. Convenience food facts	Make a list of convenience appetizers which might be kept on hand. Be sure to include easy-to-prepare fresh foods, such as celery, carrots, radishes, and apples. Which convenience appetizers are most nutritious? Least nutritious?

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Brainstorm in small groups to suggest ways to enhance meals using convenience foods. The appetizers, condiments, and garnishes, added with a flair, can make even "frozen dinners" or planned-over meals more appealing.

Plan some simple garnishes which would appeal to children. Examples: a smile on pancakes made from banana slices; a face on a pear or peach half using raisins and cherries; red hots on applesauce, raisins in oatmeal, or shaped pancakes for holidays, such as hearts for Valentines and flags for independence day.

d. Selection, care, and storage

Discuss the importance of the proper selection of garnishes, appetizers, and condiments. Principles of color, texture, shape, temperature, and flavor used in planning meals can be applied to the selection of garnishes, appetizers, and condiments as well. The enhancement of meals through appearance and flavor should be a guide in selection.

Study resources to determine proper storage techniques for spices and herbs which can be used as garnishes and condiments.

Review briefly the care and storage techniques for fresh fruits and vegetables. Point out tips for keeping items crisp, etc.

e. Principles of preparation

View Transparency 28 on "Simple Garnishes." View a filmstrip on garnishes. Suggest garnishes other than those shown in the visual aids that you have seen used to enhance food.

Demonstrate preparation of one of the following for the class: sections of oranges or grapefruit, radish roses, carrot curls, toasted nuts or pumpkin seeds, celery fans, scored cucumbers, citrus cups, tomato cups, or melon boats. As you demonstrate, explain the steps to the class and give suggestions for use.

Discuss the demonstrations and determine which ideas would be most time consuming, least time consuming, most expensive, least expensive, and which could be prepared ahead of time and stored until needed.

Observe in restaurants and at banquets the type of garnishes and condiments used. What is the most unusual or unique garnish you have seen?

Participate in a snack lab emphasizing preparation of different types of condiments, appetizers, and garnishes. Examples: Grow alfalfa or radish sprouts; make chili sauce, chutney, chow-chow, pear or corn relish; use fresh herbs, etc. [NOTE TO TEACHER: See "Bank-A-Budget" by Doris Karls and Elaine Jordan in *Illinois Teacher*, May/June 1978, pages 274-277, for a plan for involving students in laboratory food budgeting.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Cheese and milk products a. Terms	Study resources to find definitions for the following terms: *curd, whey, rennin, natural cheese, process cheese, ripened cheese, curdling, lactose, pasteurization, evaporated milk, condensed milk, casein, cultured milk, nonfat dry milk, skim milk, homogenized milk,* and *yogurt.*
	Discuss in class the definitions and terminology related to natural cheese and process cheese. What are the differences?
b. Nutritional contributions	Look up the nutrient value of one hard cheese, one semisoft cheese, and one soft cheese. Compare the nutrients in the different types or classes of cheese. Explain the reasons for the differences.
	Compare the different kinds of fresh milk for nutrients, calorie content, taste, and cost per serving. Include homogenized whole milk, two-percent milk, and skim milk. Which is the most nutritious, which has the least calories, and which is the lowest in cost per serving?
	Look up the nutrient content of canned evaporated milk and lowfat dried milk. Compare the nutrients. How do the nutrients compare with the nutrients in fresh milk? What is the difference in cost per serving?
	Suggest ways to incorporate milk in the diets of children (or adults) who do not like to drink milk. Look at recipes and select several that are high in milk or cheese content and would provide the proper nutrients. Compile a small booklet of the best suggestions.
c. Convenience food facts	Survey the cheese section at your local supermarket to determine the many convenience forms that cheese is available in today. Make a list to share with the class.
	Look for convenience products in the milk section at the store. What new forms are available that you have not tried? Look in the dried and canned milk sections as well as the frozen food section. How many convenience products did you find? Include frozen whipped toppings and cream, dried, or powdered buttermilk, etc.
d. Selection, care, and storage	Study references to determine proper selection and storage methods for milk products and cheese. How long can fresh milk be kept in the refrigerator? Can cheese be used if it has mold on it? What are the storage advantages of canned and dried milk products?
	Demonstrate the proper storage methods for soft cheese and hard cheese. What is the difference in length of time each type can be stored?
e. Principles of preparation	Study references to identify the principles of preparing milk and cheese products successfully, especially cooked

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	products. What problems may result from using a high temperature to heat milk? To heat cheese? What problems result from adding acid solutions to milk? Suggest ways to prevent each of these problems.
	Study Transparency 29 "Classifications and Uses of Cheese." Participate in a cheese identification and tasting meet. Group cheeses according to their classifications and see who can identify the most cheeses correctly.
	Plan a lunch lab to use the cheese left from the tasting session. Each group should draw a cheese from a bag, identify it and its uses, find an appropriate recipe, and prepare the food. [NOTE TO TEACHER: Encourage a variety of food preparation including appetizers, salads, entrees, casseroles, desserts, and garnishes.] Taste the prepared foods and vote to decide which cheese was preferred plain and which cheese was preferred in a prepared food. How many kinds of cheese were new taste experiences for you?
	Discuss why cheese is referred to as a meat substitute. Compare the cost per serving for a main dish made from cheese to one made from ground meat. Compare the nutritive value of each recipe. What are your conclusions?
	Find or develop three snack recipes which include milk. Prepare one after-school snack. Was it quick to make? Did you like the taste? Share your recipes with the class. Can you add fruit to any of the recipes to increase their nutritive value?
3. Soups and sauces a. Terms	Construct a definition mobile for the classroom. Use various shapes and colors of construction paper. On one side, write a term related to soups or sauces and on the reverse side the definition of that term. Pictures might be added if desired. Include terms such as: *bisque, bouillon, broth, chowder, condensed soup, concentrated soup, consomme, dehydrated soup, meat extract, puree, stew, stock,* etc.
	Study references to learn more about terms related to soups and sauces. What is the difference between bouillon and consomme? How is stock prepared? Add any new terms you discover to the mobile.
b. Nutritional contributions	Discuss the nutrient values in soups and sauces. Analyze a soup recipe to determine the amount of nutrients included. Would a soup or sauce containing milk and/or cheese be more nutritious than a soup or sauce without milk or cheese? Determine the calorie content of some favorite soups and sauces. Should these foods be included in a weight loss diet?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Examine the salt content in canned soups, dehydrated soups, and bouillon cubes. You may have to write to the companies that make the products for information since the companies are not required to include the amount of salt on the label. Information may also be found in current magazines or consumer publications. What deductions can you draw regarding the use of these convenience products for persons on low-sodium diets?
c. Convenience food facts	Brainstorm in small groups on creative ways to use convenience soup or sauce products. For instance, explore how many ways you could use frozen or canned cheese soup. View a display of convenience soups. Read directions for the amount of time required to prepare one soup product and the ingredients that need to be added. Compare the cost of the convenience soup to the cost of preparing the same soup from a recipe. Is there a savings in time or money? Compare results with classmates who made comparisons with other soup products. Do the savings vary from product to product? Which convenience product would save the most time? Which would save the most money? Cost the most money? What are the disadvantages, if any, in using the convenience products?
d. Selection, care, and storage	List factors that might influence the selection of sauces or soups in meal planning. Include factors such as nutrition, flavor, other foods in the menu, etc. Including soups and sauces could be advantageous for persons needing to gain weight or a means of adding milk to the diet of persons who do not like to drink milk.
e. Principles of preparation	View a demonstration of the preparation techniques used to make a basic white sauce. What determines how thick the sauce will be? What can you do if the sauce gets lumpy? Examine recipe books to find as many variations of white sauce as possible. Participate in a lunch lab featuring homemade soups. Plan a menu featuring soup. Each group could prepare a different kind of soup and might use different thickening agents, such as potatoes, rice, flour, pasta, or eggs. Sample the soups and discuss any problems encountered in the preparation. What other foods could be served with the soup? What type dessert might be appropriate? After the lab evaluate the foods prepared. [NOTE TO TEACHER: Encourage students to use soups as appetizers, main courses, or even desserts.] Which methods of cooking soup require the most, energy? Least energy?
4. Yeast breads a. Terms	Study resources and find definitions for the following terms: *gluten, dry yeast, carbon dioxide, fermentation, enriched flour, all-purpose flour, wheat flour, compressed yeast, leavening agent, knead.* Discuss each term in class.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
b. Nutritional contributions	Explain the statement "bread is the staff of life." Breads are a good source of carbohydrate and B vitamins. What additional nutrients can be included in breads by adding ingredients such as milk, eggs, cheese, nuts, fruits, and/or vegetables?
	Prepare a chart which shows the nutritional contributions of various kinds of flour. Include enriched all-purpose flour, whole wheat flour, and rye flour. Flour is the major ingredient in bread. Is there a significant difference in the nutritional values of breads made with different flours?
	Brainstorm in small groups to suggest ways to increase the nutritional content of home-prepared breads. Share your suggestions with the class.
c. Convenience food facts	Identify as many convenience yeast bread products as possible. Include mixes, frozen, refrigerated, ready-to-serve, and brown and serve products. How many items did you list? How do the prices compare to each other?
	Compare the price of all ingredients to make yeast rolls at home, brown and serve yeast rolls, and frozen yeast rolls. Which product costs the most? Which product costs the least? Compare the taste and the time required for preparation. Which product would you consider the best buy?
	Study the labels on several convenience yeast bread products. Are there any grades or standards listed on the label? If not, how will you determine which product is the most nutritious?
d. Selection, care, and storage	Study resources to identify the principles for bread selection and storage. Does storage in the refrigerator protect the freshness of bread? What can be done to prevent bread from drying out? What will prevent mold?
	Demonstrate for the class the proper techniques and supplies needed to freeze bread products. What is the maximum length of time breads should be stored in the freezer? Include dating and labeling ideas in your demonstration.
	Discuss the importance and meaning of the date on freshly baked yeast products in stores. Does the date indicate when the product was made or when the product will no longer be fresh? Define "day-old" bread. Is day-old bread sold at a reduced price in your area?
e. Principles of preparation	Study references to determine the purposes for the various ingredients used in yeast breads. Include flour, yeast, sugar, liquid, salt, and shortening. Which ingredient

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	controls the rate of growth of the yeast? Which ingredient serves as food for the yeast? Which ingredient causes the formation of carbon dioxide gas? Which ingredient makes the bread tender and improves keeping quality?
	Examine the different methods of preparation including the straight-dough method, the batter method, and the cool-rise method. Which method takes the least amount of time? Are the characteristics of the yeast bread products the same regardless of the method used to make them?
	Participate in a yeast bread lab. Each lab group might select a different product and different methods of preparation. Evaluate the products and discuss the methods used in their preparation. Freeze the breads to serve later with meal labs.
5. Salads a. Terms	Define terms related to salads, such as *marinate, accompaniment, emulsion,* and *seasonings.*
	Develop a word game which will help classmates become familiar with types of salads, different uses for salads, and ingredients used in salads. Exchange games with another student and work out the answers.
b. Nutritional contributions	Select three salad recipes from a cookbook. Look up and record the nutrients of each ingredient from a Nutritive Values of Foods chart. Total the amount of each nutrient for each recipe; then divide each total by the number of servings the recipe yields. Add the per-serving nutrients for any required salad dressings to your totals. What would the nutrient contribution be for one serving of each recipe? Which salad is the most nutritious? Could it be served as an entree? Which salad is the highest in calories?
	Discuss the vitamin content of leafy green salads and vegetable and fruit salads. What kind of salad would be high in vitamin C? What kind of salad would provide a lot of vitamin A?
	List all the protein food sources that you can think of that are commonly used in salads. Share ideas with classmates.
c. Convenience food facts	Visit the salad dressing section of the supermarket and record the types of convenience salad dressings available. Look also in the refrigerated food section and in the fruit and vegetable section. How many different types did you find?
	Discuss salads that may be purchased ready-to-eat. What kinds are available? Check the delicatessen section of a

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	local supermarket. Salads may also be available in the fruit and vegetable section and in the refrigerated foods section.
	Read articles on the foods developed for the space program. How has this program influenced foods available at the supermarket? Did you find any information on salads? Have you seen any freeze-dried salads in your local supermarkets? Camping supply store?
d. Selection, care, and storage	Discuss how the seasons and availability of various fruits and vegetables may affect the selection of ingredients for salads. For instance, in the winter months tomatoes may be high in price and low in taste or flavor. Strawberries may not be available in winter months. Better choices for winter salads may be carrots, cauliflower, grapefruit, and canned fruits. Charts on seasonal availability of fruits and vegetables are included on Transparencies 30 and 31. [NOTE TO TEACHER: The charts may be used as transparencies or duplicated for handouts.]
	Watch a demonstration of the care and storage techniques for leafy greens. The demonstration might include an experiment on storage methods. Store part of the greens in plastic bags, some in the vegetable drawer of the refrigerator unwrapped, some in the shelf area unwrapped, and some in a brown paper bag on a shelf in the refrigerator. Compare after one day and again on the second day. Which method of storage seems to work the best?
	Study resources to determine ways to prevent darkening of bananas, fresh pears, avocados, etc. Share the ideas you found with the class.
e. Principles of preparation	Study resources to determine the principles that apply to salad preparation. Keep in mind that salads should be fresh, attractive, and nutritious.
	Participate in a salad lunch lab. Prepare a variety of salads such as congealed salad, vegetable salad, fruit salad, dessert salad, entree salad, appetizer salad, etc. [NOTE TO TEACHER: If the salads require special dressings, students might prepare the dressing the day before they prepare the salads.] Put all of the salads together to serve in salad bar fashion. What other foods might be served with each salad? Select a bread prepared during the yeast bread lab to serve with the salads. Plan and prepare an appropriate dessert. Share information about your salad lab experience with the other lab groups.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Plan, prepare, and serve appropriate salads to accompany other lunch and dinner labs. [NOTE TO TEACHER: Encourage students to choose a variety of salads which may be used as appetizers, main courses, accompaniments, or desserts.]
6. Meats, poultry, and fish a. Terms	Define the following terms related to meats: *amino acids, aging, additives, collagen, connective tissue, cured meat, grading, marbling, meat analog, textured vegetable protein, protein, variety meats, trichinosis, braising, roasting, moist-heat cooking methods, cooking in liquid.*
	Study references and become familiar with terms related to poultry such as: *capon, roaster, broiler-fryer, duckling, squab, turkey, goslings, giblets, braise, fricassee, simmer, truss, stew, deep-fry.*
	Compile a list of definitions related to fish including the following: *finfish, shellfish, fillet, cured fish, smoked fish, pickled fish, iodine, thyroid, goiter, scallop, bisque, chowder.*
b. Nutritional contributions	Discuss the major nutritional contributions of meats, poultry, and fish. Study references or nutritional composition charts to find specific information for each. Which provides the most protein? Which is the lowest in cholesterol? Which has the least fat? Which provides the most vitamins? Which would be the most expensive? Which would be the least expensive source of protein?
c. Convenience food facts	List the canned meats, poultry, and fish that you are familiar with. How many do you know? Combine the lists of the class and discuss the products that are most unusual.
	Discuss ready-to-eat meat, poultry, and fish items that are available in your community. Compare prices at fast food or take-out restaurants and at delicatessens in supermarkets.
	Survey the frozen food section at the supermarket to see how many convenience items of meat, poultry, and fish are in stock. Read the package directions to determine how much time is required to prepare the frozen products.
d. Selection, care, and storage	Study charts in references or other resources on the cuts of red meats. Which areas of the carcass yield the most tender cuts? Why? Identify the choice cuts of beef, lamb, pork, and veal. Call a market to find out the current price per pound of these choice cuts. Ask the butcher for recommendations on the storage of fresh meat and length

of time it can be kept. Share the information with the class. [NOTE TO TEACHER: If possible, take the class on a field trip to a grocery store or meat market to see beef cut up.]

Watch a teacher demonstration on cutting up a whole chicken. Practice at home during the next week and report to the class on your experience.

Participate in small group reports and demonstrations on one of the following: wrapping meat for freezer storage; storage techniques for fresh fish; removing the bones from cooked fish; serving size for various cuts of meat, poultry, or fish; how to recognize "fresh" fish; etc.

e. Principles of preparation

Study references to find the principles for preparation of meats, poultry, and fish. What is the one principle that is common to the preparation of any food containing protein?

Discuss dry heat and moist heat methods of preparation. Which method is best for less tender cuts of meats? Is this same method also appropriate for less-tender poultry? Since fish is tender, what factor determines the cooking method to be used? Which methods use the least energy?

Participate in a dinner lab which utilizes meats requiring baking, roasting, or broiling. Groups should choose different methods for cooking tender cuts of meats, tender poultry, and fish. [NOTE TO TEACHER: One group might prepare their meat, poultry, or fish on a barbeque grill. Others might use the oven broiler or microwave.] Each group should plan a menu which also includes an appetizer, salad, vegetables, bread, and dessert. [NOTE TO TEACHER: Encourage students to try foods from these categories which they have not prepared before or to choose a new method of preparing them. Emphasize use of appropriate garnishes and sauces.] Evaluate the foods prepared and the methods of preparation used.

Participate in a dinner lab which utilizes meats requiring moist heat methods of cooking. Groups should choose different kinds of meat, poultry, or fish than selected for the first lab. For example, if Group I prepared poultry during the first lab, they should select fish or some type of meat for the second lab. Select meat, fish, or poultry suitable for moist heat methods of preparation. Each group should plan a menu which also includes an appetizer, salad, vegetables, and dessert to accompany the meat chosen. [NOTE TO TEACHER: Emphasize planning a nutritious, appealing meal suitable for a family. Encourage consideration of costs in planning.] Evaluate the foods prepared and the methods used in preparation.

CONCEPTS	LEARNING AND EVALUATION EXPEREINCES
7. Cakes and frostings a. Terms	Define terms related to the preparation of cakes and frostings. Include *shorten, emulsify, sponge cake, chiffon cake, leavening agent, gluten formation,* etc. Describe the differences in butter cakes, sponge cakes, and chiffon cakes.
	Look up recipes for the two general kinds of cakes (those made with fat and those made without fat). Study the recipes to gain a better understanding of the techniques and differences in ingredients for each type of cake.
b. Nutritional contributions	Analyze the nutritional contribution of cakes and frostings. Look up cakes on a Nutritive Values of Foods chart. What is the cake with the lowest caloric content? Why is it lower? What is the major contribution of cakes and frostings to the diet?
	Brainstorm to identify suggestions for adding more nutrition to cakes. Examples: nuts, fruits, raisins, carrots, pumpkin, squash. What are some nutritious alternatives to the usual frostings and fillings used for cakes? Examples: applesauce, fruit glaze, fruit.
	Suggest ways to reduce the calories in cakes. Include: serving the cake with fruit instead of frosting, eating the cake without frosting, using low-fat milk in the cake.
c. Convenience food facts	Investigate the variety and prices of convenience cakes and mixes the next time you are at the supermarket. Include ready-to-eat cakes, frozen cakes, and cake mixes. Report to the class on how many kinds of cakes you found and the price ranges.
	Compare the cost of preparing a white layer cake to the cost of preparing a white layer cake mix. Select a specific recipe and obtain prices for all the ingredients. Which cake would cost the most? Make both cakes and compare the results by having the class taste small samples from one layer of each without knowing which cake was prepared from the mix and which cake was made from "scratch." How many preferred the "scratch" cake?
	Prepare a fudge frosting for one of the white cake layers. Use a ready-to-use fudge frosting for the remaining layer. Compare the texture, flavor, cost, and time required for preparation. Does the convenience item cost more or less? How many calories does it add to a serving of cake?
d. Selection, care, and storage	Discuss storage of cakes. Where should a cake with whipped cream or cream cheese frosting be stored? How long can a chocolate cake with fudge frosting be stored in a cake container at room temperature? Can cakes be stored in the freezer? How?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Assemble a display of items and equipment that may be used in storing cakes. Include freezer wrap, plastic wrap, aluminum foil, baking pans with lids, plastic cake carriers, and cake covers. Demonstrate the proper use of each item.
e. Principles of preparation	Watch a demonstration of the preparation techniques for a sponge cake. In what ways do butter cake methods differ from sponge cake methods? What are the differences in ingredients?
	Plan a simple butter or sponge cake as a dessert for a lunch or dinner lab. Differentiate between conventional and one bowl or quick methods for mixing butter cakes. Describe the conventional sponge method. Groups might choose to use different pans to illustrate the various forms in which cakes may be baked. Examples: Bundt pan, muffin tin, loaf pan, layer pan, sheet cake pan. Why is choosing the correct pan size important? How full should muffins tins be filled for cup cakes? What effect does temperature have on cakes? What are typical baking temperatures and times for each type cake and cake pan? What are the qualities of a good butter cake? A good sponge cake?
	View Transparency 24 on "Ways to Cut Cakes." Which method of cutting would be appropriate for a tea or reception? Which might be the easiest for a small family?
	Prepare an appropriate frosting, filling, glaze, etc., for cakes prepared in the foods lab. What are the major types of frostings and fillings? What procedures are used to prepare each type of frosting? What procedures should be used for frosting a cake?

COMPETENCY: *Ability to preserve food for future use*

SUB-COMPETENCIES: *Utilize methods for preparing jams, jellies, and preserves.*

Utilize acceptable methods for home canning of foods.

Utilize acceptable methods for freezing foods.

Utilize acceptable techniques for drying foods at home.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
F. Food Preservation and Processing 1. Making jams, jellies, and preserves	Study references on making jams, jellies, and preserves. Look for unusual recipes for making these condiments. For example: cranberry jelly, pomegranate jelly, or jalapeno pepper jelly. Discuss making jelly for gifts. Invite the local extension agent to demonstrate traditional jelly making for the class. Discuss the techniques for making sun preserves and no-cook freezer jams.
2. Home canning techniques	Interview five homemakers to determine if they have canned any foods at home in the last three years. Ask what kinds of food they canned and what kind of equipment they used. Compile the results in class. What percentage of the total number interviewed had done any home canning? Is this typical for the United States? Try to find some current statistics on the increase or decrease in home canning in the past three years. Study resources to find out how to can food by the water bath method and by the steam pressure method. What are the differences in the two methods? What types of foods must be canned by the steam pressure method? What are the dangers involved in home canning? What precautions should be observed when using home canned foods? How can spoiled foods be identified?
3. Home freezing	View an exhibit of containers, equipment, and supplies used in home freezing of foods. What equipment is necessary to blanch vegetables? Why is this step important? How is blanching done? Look for a chart which gives information on the length of time to store different kinds of foods in the freezer. Why is dating and labeling important for home-frozen products? What foods can be stored for the longest periods of time? Which foods can only be stored for a short period of time? Are there any foods which cannot be frozen? How can spoiled foods be identified?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
4. Drying foods	Find recipes for drying foods at home in a conventional oven, a convection oven, and a microwave oven. Experiment by drying a food such as zucchini squash or peas. If possible, dry the same amount of food in two different kinds of ovens. Which type of oven was most successful? Which took the least amount of time? Rehydrate the vegetables dried in class and cook them. Is there any difference in appearance or taste in the products prepared in the different ovens? Do the products taste like fresh-cooked vegetables? Predict situations where dried foods would be an advantage. Discuss dried foods that are available in grocery stores and in sporting goods departments. What are the prices for dried foods as compared to fresh foods?

COMPETENCY: *Ability to analyze career and job opportunities*

SUB-COMPETENCIES: *Identify career opportunities related to food and nutrition.*

Identify educational opportunities related to food and nutrition careers.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
G. Careers 1. Career opportunities	Interview the owner or manager of a local bakery. Find out how many people are employed, the job titles, and the kind of experience or training necessary to be employed in this particular bakery. Other students may obtain the same information by interviewing a caterer, dietitian for a nursing home or hospital, a cafeteria manager, a school food service employee, an airline food supplier, and a chef. Conduct an information exchange in class.
2. Educational opportunities	Invite a panel of students and teachers from preemployment and cooperative home economics classes to speak to your class regarding their experiences in preparing themselves or their students for employment. Ask them to include information on prerequisities for enrollment, amount of time in class or on the job, the kinds of jobs available, etc.

HOMEMAKING III
FOOD AND NUTRITION

COMPETENCY: *Ability to determine nutrition needs of family members*

SUB-COMPETENCIES:

Outline the basic processes of digestion, absorption, and metabolism.

Summarize common nutrient deficiencies and resulting diseases.

Analyze current nutrition issues.

Plan diets for individuals with special nutrition needs.

Examine factors affecting the world food supply and efforts to improve world nutrition.

CONCEPTS / LEARNING AND EVALUATION EXPERIENCES

A. Nutrition
   1. Digestion and absorption of nutrients

Define *digestion, absorption,* and *metabolism.* View a transparency of the digestive system. Make a list of the parts of the body involved in the digestive process. Explain the changes in food which take place in each part. [NOTE TO TEACHER: Use Transparency 32, "The Digestive System."] Where does digestion begin? What moves food from the mouth to the stomach? What processes occur in the stomach? Where are nutrients absorbed into the bloodstream? What is the liver's role in digestion? What functions occur in the large intestine? Watch a demonstration by a chemistry or biology teacher, illustrating with synthetic digestive juices, on how food is broken down for digestion. Discuss the role of digestive juices in digestion.

View a transparency comparing the absorption process to transporting products by truck. (See Transparency 33.)
For example:
Loading - Mouth
Short haul - Esophagus
Storage - Stomach
Long haul - Small intestine
Tunnel or bridge - Villi
Highways - Bloodstream
Processing plant - Liver
Garbage route - Large intestine

   2. Nutrient deficiencies
      a. Diseases

Find pictures which show examples of individuals with nutrient deficiencies. Explain possible cause(s) of each illness. Point out ways the deficiency could be treated. [NOTE TO TEACHER: Deficiency diseases may include: anemia, osteoporosis, tooth decay, night blindness, malnutrition, beriberi, scurvy, goiter, pellagra.] Which nutrient deficiencies and deficiency diseases are most likely to occur in the United States?

Divide into groups to study a specific nutrient and any disease or illness related to the nutrient. Report to the class in the form of a TV public service spot report to explain how to avoid the illness and/or disease. The following points should be included in the report: 1) how widespread the deficiency is, 2) the seriousness of the deficiency, 3) symptoms of the deficiency, and 4) nutritional treatment of the deficiency.

Study references to obtain information for making dietary changes required for treating various nutritional deficiencies. Then plan a day's menu for an individual suffering from a common nutrient deficiency, such as anemia, dehydration, hemachromatosis, goiter, keratinization, xerophthalmia, scurvy, or pellagra. What foods should be avoided by the individual with the deficiency? Which foods does the individual need?

Appoint committees to investigate nutrient deficiency contributions to the following: poor teeth, nervousness, lack of appetite, over-activeness, paleness, weight loss, depression, fatigue, night blindness, and poor bone development.

b. Animal studies

Study references on the use of animals in nutrition experiments. Which animals are most commonly used? How closely do their nutritional needs parallel those of humans? Why are animals rather than humans used for most experiments?

Study reference materials to discover procedures for conducting an animal nutrition experiment. Describe the equipment and supplies needed.

Listen to a nutrition expert describe nutritional studies conducted with animals. If possible, visit a college, research laboratory, hospital, or business where nutrition studies using animals are being conducted. What kind of experiments are underway? Which animals are being used? What is the significance of the experiments? How can the results help people?

Arrange with a biology teacher to conduct a simple animal nutrition experiment, such as one to determine the effect of various diet patterns on growth. Diet patterns may include a diet based on the Daily Food Guide, a snack diet, and a snack diet plus vitamin pills. Make plans for animal care; determine age, sex, and number of animals needed; determine data to be collected; and decide how results will be evaluated. Carry out the study. Keep a record of growth, food intake, and food efficiency on a bulletin board graph. Record time and rate of growth.

Study data obtained from nutrition experiments. Which experimental methods produced the best results? What factors may have influenced these results? What conclusions may be drawn about human nutrition?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
3. Current nutrition issues a. Megadosing	Visit a local pharmacy in a drugstore or supermarket to examine the various vitamin and mineral supplements available to the consumer. Discuss the various kinds of vitamin and mineral supplements available, the recommended dosages, the percentages of RDA, and cost of various brands.
	Define the terms *megadosing*, *toxicity*, and *pharmacological effects*. [NOTE TO TEACHER: Pharmacological effects occur when the presence of a vitamin is so high that it has a drug effect rather than a nutritional effect.] Discuss how each term is related to supplementation of vitamins and minerals.
	Keep a record of the food you eat for 24 hours. Use a table of the Nutritive Value of Foods to compute the daily intake of vitamins and minerals. Compare the total intake of each vitamin and mineral to the Recommended Daily Allowances. Determine which ones were below the RDA. Discuss ways the deficiency can be corrected.
	Analyze pamphlets and handouts available from manufacturers of synthetic vitamins. Discuss the benefits claimed by the manufacturers. Do the benefits result in megadosing? Could side effects result from the recommended dosages? Are the benefits really pharmacological effects? What research backs up the manufacturers' claims?
	Research the vitamins and minerals which are not excreted from the body. Discuss the dangers involved when they are taken in excess. What symptoms can be observed when toxicity occurs? [NOTE TO TEACHER: Include vitamin A, vitamin D, vitamin E, sodium, phosphorus, iron, iodine, fluorine, and selenium.]
b. High cholesterol	View Transparency 18 of the Dietary Guidelines for Americans. Discuss how each guideline affects health. Write a report explaining how each guideline can be applied to a student's life style.
	Define the term *cholesterol*. Identify food sources high in cholesterol. Discuss the relationship between cholesterol and 1) heart disease (artherosclerosis), 2) saturated and unsaturated fats, 3) exercise, 4) smoking and alcohol consumption, and 5) obesity.
c. Sodium and sugar content of processed foods	Keep a diary of the food you consume in a normal day. Refer to a table of the Nutritive Value of Foods to determine the total amount of sugar and saturated fats consumed in the day. Compare the totals to that recommended by the Food and Nutrition Board. Modify the diet to decrease the consumption of sugar and saturated fats.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	View Transparency 34 identifying some foods that have "hidden" sodium content. Research other foods to discover hidden sodium by reading descriptive labels of foods or a food composition table. Make a bulletin board showing pictures of foods and the sodium content of each food. Suggested title: "Sniffing Out Sodium." Experiment in substituting other ingredients for the salt and sugar in recipes. Hold a taste test to compare the varied recipes. Code all foods with numbers. Allow each student to taste the foods. Discuss which variations had the best taste and which most closely resembled the original salt or sugar flavors. Salt substitutions may include potassium chloride, herbs, spices, etc. Sugar substitutions may include honey, molasses, artificial sweeteners, flavorings, etc.
d. Fetal alcohol syndrome	Invite a guest speaker (obstetrician, pediatrician, or a representative from March of Dimes or Planned Parenthood) to discuss the dangers that alcohol can have on an unborn child. Ask the speaker to define "fetal alcohol syndrome." View a film showing the physical and mental disorders that are associated with fetal alcohol syndrome.
e. Anorexia nervosa and bulimia	Define the terms *anorexia nervosa* and *bulimia*. Search through newspapers or magazines to find articles concerning anorexia nervosa and bulimia. Discuss the articles. Describe common characteristics of people with each disorder. What reasons are given for anorexia nervosa and bulimia? What dangers do these conditions present to health? How are they regulated? Invite a doctor, nurse, or public health official to speak about anorexia nervosa. What symptoms accompany the disorder? How common is the illness? How do individuals contract the illness? What role does self-concept play in the illness? How long does the illness last?
f. Vegetarianism	Define the term *vegetarian*. Describe the different types of vegetarians. Define the term *lacto-ovo-vegetarian*. What foods are included in this diet? Is this a popular type of diet? Is this diet more or less difficult to balance than other types of vegetarian diets? Plan a well balanced lunch menu for a person following a lacto-ovo-vegetarian diet. Include at least one serving of food from each food group. Discuss the menus in class and determine if they meet the daily requirements.

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

Study resources to find information regarding the *lacto-vegetarian diet*. What foods are included in this diet? Which food group is not included?

Work in groups to plan a well-balanced breakfast menu for a person who is following a lacto-vegetarian diet. Be sure to include about one-third of the day's calories and nutrients. Present a report on the menu your group planned to the class.

Invite a dietitian to speak to the class on *strict vegetarian* or *"vegan" diets*. Be prepared to ask questions regarding how the vegetarian diet can provide enough protein, calcium, etc. Also ask about combining foods that contain incomplete proteins to obtain complete proteins.

Develop a chart of various combinations of foods that will provide complete protein. An example is beans and rice. [NOTE TO TEACHER: *Help Yourself: Choices in Foods and Nutrition* by Butterick Publishing contains a good chart on foods included in all kinds of vegetarian diets. Most of the state adopted textbooks also contain some useful information. Other books regarding vegetarian diets should be available in your public library.]

Plan a well-balanced dinner menu for a person on a strict vegetarian or "vegan" diet. Hand in the menu for evaluation. Discuss the menus developed by other class members following the evaluation. Is it difficult to plan this type of menu? Why? Which of the three vegetarian diets is the most difficult to plan for well-balanced nutrition? Is variety difficult to achieve? Which vegetarian diet could be dangerous if the person planning the meals was not well-informed in nutrition?

Study resources to learn about the roles that various factors play in determining the diet of individuals. How do these factors influence individuals to become vegetarians? What other factors cause people to become vegetarians?

Discuss the nutritional deficiencies that a vegetarian can encounter. Use a Table of Food Composition to compile a list of fruits, vegetables, and grain products that have iron in them. Use the list to plan a menu for a vegetarian. Add up the total grams of iron. Is the iron equal to or more than one-third of the RDA for your age and sex? If not, revise the menu until the iron meets one-third of the RDA.

Define the terms *complete protein* and *incomplete protein*. Give examples of foods in each category. Relate how a vegetarian could easily have difficulties obtaining enough complete protein. Give examples of how incomplete protein combinations can provide complete protein. [NOTE TO TEACHER: Combinations might include peanut butter and bread, cornbread and beans, macaroni and cheese, and milk and cereal.]

Search newspapers, magazines, and cookbooks for recipes that combine legumes (lentils, soybeans, peas, beans, or nuts) and/or dehydrated vegetables with grains (buckwheat, corn, rice, rye, or wheat). Bring at least one recipe to share with the class. Divide into groups and select one recipe for each group to test in class. Prepare and evaluate the recipes.

g. Organic foods

View a transparency illustrating the methods of growing organic and natural foods. (See Transparency 35.) What must happen to manure and compost before plants can use them? Predict possible danger to plants and animals if natural manure was contaminated with an infectious disease. Discuss the processes that occur for plants to utilize fertilizers. What are the disadvantages and advantages of using pesticides?

Define the terms *organic, health,* and *natural* foods. Brainstorm to identify myths about organic or health food. Study references to determine any truths within the myths. Write the myths on paper. Below each myth write "FACT" and explain why the myth is or is not true.

Examine specimens of "organically" grown and "naturally" grown foods under a microscope. Compare the specimens. Study resources to determine the elements that make up the food molecules. Discuss. Does the chemical make-up in organic and natural foods differ? [NOTE TO TEACHER: If microscopes are not available, illustrations of structural formations may be used.]

Visit a health food store and a supermarket. Select loose, boxed, and canned products from each store. Compare the cost, taste, texture, and flavor of these two types of foods. Can you tell the difference in the foods? Study the labels for the types of foods. Are the ingredients similar? Summarize your findings by making a list of advantages and disadvantages of organically grown food.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Work in groups to interview a farmer and a wholesaler or retailer. Inquire about the differences in growing crops organically and with non-organic methods. What factors increase the cost of organically grown food? How can the consumer who prefers organically grown foods be sure the foods purchased are organically grown? Write a report identifying which growing method your group prefers. Back up your answer with the information gained in the interviews. Hold a tasting party to compare the tastes of foods produced organically and foods produced by non-organic agricultural methods. Let each student taste the same food produced by both methods. Ask the students if there is a taste difference in the foods. If so, is the taste difference great enough to justify the cost?
h. Other issues	Find articles on other food related issues such as dangers related to hormones, enzymes, etc. Report to the class on one article or issue.
4. Special nutrition needs a. Pregnancy	View Transparency 47, "Increase Nutrients During Pregnancy." Discuss the amounts and kinds of food necessary to achieve the nutrient increases. Refer to a Nutritive Values of Food chart for specific information. Invite a consulting dietitian or school nurse to speak to the class on "Nutrition During Pregnancy." Ask questions regarding weight gains, when to increase nutrients in the diet, what foods to avoid, number of servings from each food group, etc. Plan a day's menus with an extra 300 calories and the correct nutrients for a mother-to-be. Be sure to count the nutrition and calorie contents of liquids and snacks. Turn in for evaluation. Review information related to consuming alcohol during pregnancy. How much is safe? Would the extra calories from drinks make it difficult to stay within the 300 extra calorie limit? Remember that alcoholic drinks provide empty calories. How would this affect obtaining the additional nutrients necessary during pregnancy? What dangers does alcohol present to the unborn child? Study information related to consuming large amounts of caffeine during pregnancy. How does caffeine affect the fetus? What symptoms can be exhibited by newborns addicted to caffeine?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Find information related to morning sickness, heartburn or indigestion, constipation, and edema which some women may experience during pregnancy. Make suggestions for dietary changes which can help alleviate these conditions.
	Study the functions performed by the placenta and the umbilical cord during gestation. Explain how the placenta functions as lungs, liver, and intestines. How many arteries are in the umbilical cord?
	Analyze information on problems that may occur when teenagers who are still in a growth and development stage become pregnant. What special dietary adjustments would be necessary to provide adequate nutrition for both the mother and the developing infant?
	Give a report in class on the dangers of smoking and taking drugs during pregnancy. How is the fetus affected? How are these substances related to the nutrition of the fetus?
b. Young children	Study resources on feeding infants from birth to one year. What are the advantages and disadvantages of breast feeding? What are the advantages and disadvantages of formula feeding? Which method is currently the most popular?
	Determine the cost of feeding an infant for one year on a commercial formula diet. Then figure the cost of a home prepared formula using evaporated milk, water, and corn syrup. Which formula would be the least expensive? Compare the nutrient contents of the commercial formula to the home prepared formula. Is there a significant difference in the two kinds of formula?
	Invite a pediatrician to speak to the class regarding "Introduction of Solid Foods to Infants." Ask questions such as: When are solid foods begun? Which foods are introduced first? How much will the infant eat at one serving? What techniques will encourage the infant to like a variety of foods? When should infants be weaned? How can parents recognize signs of food allergies?
	Interview a child care worker and ask questions about foods served in child care centers for meals and snacks. Who plans the meals and prepares the food? What are the sizes of servings for small children? How are the children encouraged to eat a variety of foods? Summarize guidelines for day care food service.
	Observe a demonstration on how to feed an infant solid food. Does the infant spit the food out? Does the infant seem to enjoy the food? Ask the mother questions about the feeding process and any problems she has.

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

View Transparency 48 on "Food Servings for Young Children." Discuss the sizes of servings for young children. Would you use a regular size dinner plate or a luncheon size plate to serve children's foods?

Suggest ways of serving food that would be especially appealing to children at mealtime or snacktime. Examples: Use cookie cutters to cut sandwiches into unusual shapes; make faces on pancakes; serve an ice cream cone upside down on a plate with a clown face on the ice cream, etc.

Prepare meals for two groups of young children. For the first group, the food should be plain with no decorations. Sample menu: plain sandwich halves, fruit salad, milk. For the second group, serve a meal which is decorated to appeal to children. Sample menu: pinata sandwiches (cut in animal shapes with a cookie cutter), sombrero salad (lettuce leaf topped with pineapple ring in which one-third of a banana stands with a cherry on top, surrounded with grated cheese for fringe), and milk served in bright cups. Hang a pinata overhead and use bright paper plates and napkins. Use a sombrero as a centerpiece. Compare the reactions of the children.

Study resources and develop a set of written guidelines that would enable parents to help children develop good eating habits. Try out some of the guidelines when you babysit with young children.

Study the recommended daily allowances for a child, age 3. Develop a day's menu plan which will provide the necessary nutrition. Keep in mind the serving sizes for children. Include nutritious snacks for the day in the plan. Hand in for evaluation.

c. Adolescence

Study references on the nutrition requirements during the adolescent growth period. Many teens are very active physically and require a lot of calories for energy. What are the recommended allowances for males and females during adolescence? [NOTE TO TEACHER: Also see pages 145 to 157 in *The New Nutrition*, Teacher's Edition, for additional activities on personalizing nutrition.]

Discuss in class the food habits of teens. Do they eat more fast foods than the average adult? Do they tend to eat a lot of snack foods? How concerned are teens with weight and appearance? What effect can fast foods and snack foods have on achieving a balanced diet with adequate nutrition?

Study articles on the nutrition provided by foods from fast food restaurants. What were the findings? Is the nutrition adequate for energy and development? Report to the class. Was the article you read biased or factual?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Make a chart comparing the cost, calories, and nutritive value of foods that may be bought in fast food restaurants. Share your chart with the class. Discuss.
	Plan a day's menus for an 18-year-old boy and a 14-year-old girl which will provide an adequate number of calories and adequate nutrition. Use information from the Recommended Daily Allowances and Nutritive Values of Food charts. Hand in the menus for evaluation.
	Study references to determine the latest facts and findings regarding acne. Do certain foods need to be avoided by teens to control skin problems? If so, which foods may cause problems?
	Discuss the importance of self-image to teens and the relationship of food and nutrition to that image. What image is desired by many males? What image do many females desire? Is this changing? Is so, how?
d. Athletes	Define the terms *carbohydrate loading, protein loading, protein supplements, pre-game meal,* and *dehydration*. Discuss how each term is related to the athlete. What misconceptions are often believed about these terms?
	Brainstorm to list ways to exercise the body. Which exercises could last a lifetime? What special diet changes would be needed for each exercise method? Outline characteristics of an exercise program that could last a lifetime. Select a sport or exercise program and research the disadvantages and advantages of the exercise according to the goals outlined in class. Share your findings with the class.
	Listen to a physician describe the value of exercise and nutritional requirements of persons engaging in different types of exercise. Are any changes in eating habits usually required? Are extra calories needed?
	Write to the American Alliance of Health, Physical Education and Recreation and ask for information regarding diets for athletes. Discuss the recommendations. Design posters describing safe and nutritious diets for athletes.
	Survey coaches and athletes for pointers on diets for athletes. What foods are recommended? Which foods should be avoided? What kinds of liquids are consumed during games? Are salt tablets given to players? What foods are eaten during the pre-game meal? When is the pre-game meal eaten? Assess your findings based on using your nutrition knowledge and resources on good nutrition.

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Look for articles in newspapers and magazines about diets for athletes in training. Analyze the articles. Are the diets in the articles based on sound nutritional principles? What myths can you identify? What differences would occur in diets for professional athletes and mature athletes? Discuss the articles in class.

Assume you are a coach of a favorite sporting event. Determine how many calories the sport would expend for a 150 pound athlete. Outline a meal plan for the athlete. How many total calories per day should be consumed? From which food groups should extra calories be obtained? What specifications would you recommend for the pre-game meal?

e. Elderly

Study resources on nutritional needs of the elderly. Explain the importance of planning nutrient-dense meals for the elderly because of decreasing needs for energy while nutrient levels remain the same as for other adults.

Visit a local nursing home or retirement home and interview the person in charge of food service. What special needs do they consider in preparing meals for the elderly? Who does the menu planning? Are fried foods served? Are spicy foods served? Report your findings to the class.

Determine what local services are available to assist senior citizens with meals. What federal programs can provide aid to citizens who are on fixed and limited incomes? Who administers these programs in your area? Do they need volunteers to assist with the programs? Could FHA/HERO be involved in this kind of program by making tray favors, etc.

Invite the county extension agent to visit your class and bring samples of materials the extension service has available on nutrition, meal planning, etc., for the elderly.

Describe special considerations of dietary planning for the elderly. Examples: fewer calories, more frequent meals, soft foods for those with dental problems, and mildly seasoned foods for those with digestive problems. What are some psychological reasons for loss of appetite and not eating in the elderly? (Examples: loss of independence, loss of spouse, depression, etc.) What can be done to help an elderly person regain appetite?

Prepare a low cost menu which meets the dietary needs of an elderly person and can be prepared with a minimum amount of physical energy. Suggest adaptations which would make the menu suitable for a person with dental problems, a person with digestive problems, and a person who is overweight.

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

f. Illness

Discuss illnesses that require special diets to aid in control or recovery. Examples: diabetes, heart disease, food allergies, or ulcers. Have you had any personal experience with any illness that required special diets? What kinds of foods were restricted or eliminated?

Read articles related to coronary heart disease and/or strokes. What type diets are recommended? Why are fats and sodium often restricted?

Contact your local hospital to see who instructs patients requiring special diets. Interview the instructor or dietitian or invite them to speak to your class regarding special diets.

Call or write the American Heart Association and ask for information on special diets for heart patients or stroke victims. Study the information received and give a brief report to the class. What other services does the American Heart Association provide?

Visit the public library and determine what kinds of books are available to assist people requiring special diets. Are cookbooks for diabetes and heart disease patients available? Check out several special diet books for the class to review and evaluate. Would the books be helpful to persons planning menus for the special diets? Can you think of other information which would be helpful?

Study information on diets for diabetics. What are some of the dangers if diabetic patients do not follow their diets? What connection is there between obesity and diabetes? Why is insulin prescribed for most diabetic patients? In what forms might insulin be prescribed?

Choose as a topic a medical condition requiring a special diet. Locate and study reliable information regarding the special dietary requirements and report to the class. Topic examples: migraine headaches, allergies, ulcers, diverticulosis, etc.

Plan and prepare an exhibit using food models to show meal variations for individuals with special needs: elderly, young child, pregnant woman, person with hypertension or heart disease, etc. Show how meals can be modified to meet special needs of individual family members. Verify the nutritional adequacy of the meals proposed. [NOTE TO TEACHER: The exhibit might be used during a school open house or placed at a local library or hospital. See Supplement at end of Semester Course for details.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
5. Changing personal eating habits a. Factors influencing health	Discuss the potential influence of your present dietary patterns on your future health. Identify possible dietary "paths" you may take, and generate examples of foods falling in each "path." The decisions you make about food choices may determine your future health. For good health your body needs a balanced diet as well as adequate exercise and sleep. Your future health depends upon which path you decide to follow. Poor health or good health, the choice is yours.
	Analyze ways you need to improve your diet. Discuss the influence daily decisions have upon your future health.
	Discuss signs of good health and poor health. Brainstorm to identify descriptive phrases depicting signs of good and poor health. Summarize factors relating to optimum health, and compare with factors which influence poor health. [NOTE TO TEACHER: Stress to students that by caring for their bodies, they are giving themselves the opportunity for good health.] Summarize contributions of exercise, sleep, and balanced diet to good health.
	Listen to a physical education teacher or athletic coach explain the benefits of exercise and the steps to use when planning a personal exercise program. Demonstrate your favorite exercises and explain their health benefits to the class.
	Design collages titled "Nutrition: A Lifetime of Dietary Decision Making" to display in the classroom. The collages should depict how nutritional needs of people change at various stages of the life cycle. Discuss ways to improve eating patterns at various stages of the life cycle. Discuss why the body's nutritional needs change.
	Discuss the importance of the development of nutritious eating habits for teenagers. What nutrients are often lacking in the diets of teenagers. How can empty calorie snacks be detrimental to the health of teenagers?
	Consider ways nutrition can affect job success. Discuss job performance factors related to nutrition. Give examples of job problems which may be related to poor eating habits. Discuss ways to assure a well-balanced diet to improve work performance.
b. Changing eating habits	Discuss reasons poor eating habits are hard to break. Analyze procedures people commonly use in an attempt to change their eating habits. Why do these attempts often fail?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Study information on behavior modification for clues to more reliable procedures for changing eating habits. Report your findings to the class.
	Identify an eating habit which you need to change. Develop a plan for modifying your eating habit. Put the plan into action for one month. Report your progress to the class weekly. Write a summary of your experiences at the end of the month. What factors do you feel contributed to your success or failure?
6. World food supply a. New sources of food	Collect current advertisements for synthetic foods and bring to class. Research the availability, price, and nutritive value of each synthetic food. Discuss the advantages and disadvantages of including the foods in one's diet. Advertisements might include synthetic salt, protein, sugar, and butter.
	Interview your parents and grandparents, using a prepared questionaire, to determine the increase in food products available to consumers during their lifetimes. What changes have taken place in the forms in which food is available? In packaging? In nutritive value? In flavor? How has mass media affected the consumption of food? In what additional ways has technology influenced food consumption?
	Research to identify recent technological advances related to food. Sources of information may include local, state, and federal health departments; county extension offices; your state's land grant university; newspapers; and magazines. Share information with the class.
	Collect current articles from magazines, newspapers, research journals, and manufacturers' pamphlets to obtain information on technological advances which will affect the availability and consumption of food. Discuss the articles with the class. Technological advances might include: retort pouches; sterile, antiseptically packaged milk and milk products; shrink wrap for perishables; modified atmosphere packages for fish; and bag and box techniques for precooked meats.
b. Efforts to improve world nutrition	Study newspapers and periodicals to identify organizations working to improve world nutrition. Examples: Food and Agricultural Organization; World Health Organization; United Nation's International Children's Emergency Fund; United Nation's Educational, Scientific, and Cultural Organization; Agency for International Development: Nutrition Foundation; United States Interdepartmental Committee on Nutrition for National Development; and International Food for Peace.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	View a film or study references to determine what various nutrition organizations are doing to solve the problems in supplying food to meet the nutritional needs of the world. How have these efforts affected world nutrition? Point out ways that increasing agricultural productivity, improving animal production, and obtaining food from the sea may help meet the world's nutritional needs.
	Brainstorm to formulate a list of problems involved in feeding the world's population. Include the increasing world population, underdeveloped countries, pollution, food taboos, problems in providing enough protein foods, and ignorance.
	Research the eating habits of people in underdeveloped nations. Compare your findings with the information on Transparency 36 on "Food Consumption Patterns." Predict acceptance problems which might occur if a radically different food was introduced. Work in groups to plan a program to educate and entice persons into eating a new kind of food or food in a new packaging. [NOTE TO TEACHER: Ideas for new products may come from prior exercises.]
	Work in groups to study the following factors as they relate to supplying food to meet the nutritional needs of the world: increasing world food production, nutrition education, traditional value systems, social organizations, land ownership and tenure relationships, political climate, lack of income, transportation and storage facilities, superstitions, customs, religion, and illiteracy. Report your findings to the class.
c. Fluctuations in supply and prices	Identify food products currently in shortage in the economy. Analyze the relationship between the products' price and supply and demand.
	Divide into groups of four or five and assume that you are members of the President's Economic Advisory Committee. Your job is to predict how and why the price of apples would be affected in a given situation. Report your predictions to the class. Situations might include: demand rises (price rises); demand falls (price falls); supply rises (price falls); production cost rises (price rises); production cost falls (price falls); increased concentration of ownership (price rises); decreased concentration of ownership (price falls).
d. Political influences	Write to the United States Department of Agriculture or the Food and Drug Administration to obtain information about current legislation related to the domestic food supply. Share information with the class.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Describe the various government programs which influence the domestic food supply. Divide into debate teams and research the advantages and disadvantages which may result from implementation of each program. Programs for debate may include: farm subsidies, price supports, government food inspection, government buying of surpluses or commodities, exports and imports, and food embargos.

COMPETENCY: *Ability to manage family meals*

SUB-COMPETENCIES: *Apply nutrition knowledge and food preparation skills to special occasion meals and functions.*

Plan meal service for formal and informal entertainment.

Utilize appropriate etiquette for formal occasions.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
B. Meal Management 1. Special occasions	Make a list of holidays and the traditional foods associated with each holiday. Research the history of how the various foods became associated with these holidays. Discuss what the reactions of class members and their families would be if the traditional foods were replaced with other foods.
	Make a list of special occasions including holidays, birthdays, receptions, and other special events. Discuss the traditional themes associated with each occasion. How are the themes traditionally carried out? [NOTE TO TEACHER: The list of special occasions may be used in a later exercise.]
2. Formal styles of meal service	Collect articles about types of entertainment from the social section of the newspaper. Discuss the articles in class. Determine whether the meal service would be formal or informal. Project into the future to determine occasions when formal meal service would be needed. What knowledge concerning formal meal service would be needed?
	Brainstorm to list formal and informal occasions involving food. Discuss the type of meal service (buffet or sit-down) that is most suitable for each occasion. Point out factors which affect the type of meal service used. [NOTE TO TEACHER: Factors might include: number of guests, variety and kinds of food selected, age of the guests, facilities available, flexibility of guests' arrival, cost, location, help available, and type of party.]
	Collect pictures from magazines. Start a portfolio of ideas including party recipes and menus, party themes, table coverings and arrangements, and other decorations for buffet and sit-down meal services. Share your collection with classmates. Which themes and menus could be carried out inexpensively? Which would be moderate in cost? Which would be expensive?
3. Etiquette for formal occasions	Discuss the differences in manners for formal and informal occasions. What are the responsibilities of the host, hostess, and guest at a formal occasion?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	View a transparency showing examples of informal and formal invitations and replies. (See Transparency 37.) Discuss differences between the two types. Suggest occasions when each invitation would be used. Outline guidelines to follow when writing invitations and replies.
	Write an invitation for a party, reception, shower, or tea specifiying when, where, what, why, and who. Include an R.S.V.P. request in the invitation. Exchange invitations with a classmate and write a formal response to the classmate's invitation.
4. Managing special occasion meals	Invite a caterer to class to talk about the steps in planning and preparing menus for a formal or semiformal occasion. Discuss how to determine the appropriate type of service. How much food should be served per person? What is the best cleanup method for each serving style?
	Plan a formal or informal entertainment for a special group. This group could be faculty members, a senior citizens' group, or a nursery school class. Use appropriate invitations. Plan the menu. Prepare a market order for the estimated amount of food needed. Develop a time schedule for all work and food preparation for the occasion. Plan the room decorations, table setting and decorations, furniture arrangement, food preparation and service, greeting of guests, function activities, and cleanup.
	Devise a rating scale or check list to evaluate the meal management for special occasion entertaining. Characteristics should include: appropriateness of serving style, attractiveness of table arrangement and decorations, adequacy of preparation, and efficiency of organization and management.

COMPETENCY: *Ability to apply consumer skills to food buying*

SUB-COMPETENCIES: *Determine the services provided to the food consumer by government regulatory agencies.*

Examine food assistance programs available to individuals and families.

Determine effective procedures for complaining about food products or services.

CONCEPTS

C. Consumer Aspects of Food
   1. Regulatory agencies

LEARNING AND EVALUATION EXPERIENCES

Study references and discuss the sale of spoiled and contaminated food in the United States before 1906. What protective agencies did the U.S. Congress set up to correct the corrupt food processing practices? What are the responsibilities of each agency? [NOTE TO TEACHER: Unethical and unsanitary practices in food processing are revealed in *The Jungle*, by Upton Sinclair.]

Write to government agencies involved in protecting our food supply to obtain information regarding their work. Examples: Department of Health, Education, and Welfare; United States Food and Drug Administration; United States Department of Agriculture; United States Public Health Department; United States Interstate Commerce Commission; Federal Trade Commission; and United States Fish and Wildlife Services. Evaluate each agency's functions relative to food protection.

View Transparency 38 of U.S.D.A. grade labels. Make a list of products for which the U.S.D.A. inspects for quality and/or sets standards. What factors influence each product's grading?

Invite an inspector from the Food and Drug Administration to discuss the agency's responsibilities involving consumer protection, the specific purposes of legislation designed to protect the consumer from unsanitary food processing, and the consumer's responsibility to report products in violation of the law.

Analyze food labels from food packages. Determine if the information provided is: 1) required by law, 2) offered as additional information, or 3) added to promote sales. Research the legislative acts which require specific information to be provided.

Research magazines, newspapers, journals, and food labels to identify items the FDA has found to be hazardous to health. What actions can the FDA take to protect the consumer? [NOTE TO TEACHER: The list might include saccharin, sugar substitutes, cigarettes, nitrates, and artificial flavorings.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Assistance programs	Invite guest speakers from community assistance agencies such as the Health Department, Welfare Department, or Social Service Department to discuss their assistance programs. Discuss the purposes of the programs, how food is distributed, and who is eligible to participate in the programs.
a. School programs	Interview administrators from breakfast, lunch, and milk programs available in schools in your area. What are the goals of these programs and how are the goals met? What percentage of the students in your school participate in school food programs?
	Survey representatives and participants of food assistance programs. Explore how food assistance programs have affected the participants' philosophy concerning food help programs and individual and family health. Summarize your findings by outlining the advantages and disadvantages of food assistance programs from the participants' point of view.
b. Food stamps	Outline the restrictions of items which cannot be purchased with food stamps. Analyze grocery lists, or grocery receipts brought from home, and determine which products could not be purchased if payment was made with food stamps. [NOTE TO TEACHER: Items that can't be purchased include: pet food, vitamins and medicines, alcoholic beverages, tobacco, non-food items (such as candy and soft drinks), and hot foods or lunch counter items that are ready to eat.]
	Determine the weekly food budget for a family of four which receives food stamps. Based on the budget plan menus and "shop" for one week's food (without purchasing) at a grocery store in low income and high income areas. Compare quality, cost, and variety of foods. What items are restricted from being purchased with food stamps? Discuss observable differences in the stores such as cleanliness, size, service, and attitude of employees.
	Estimate the food allowance for a day for a family of four on food stamps. Plan menus for the day based on the computed budget. Work in groups to prepare one of the meals. Discuss how you feel about planning and eating a meal on the limited budget. How much time went into the meal preparation? How tasty and nutritious was the meal? What problems would be encountered if the budget had to be followed indefinitely?
	Discuss ways in which federal, state, and local agencies respond to the specific needs of individuals and families. Work in groups to evaluate each program's effectiveness

in meeting needs of these individuals. Propose revisions to a program to improve its effectiveness. Prepare presentations to share the information with the class. Programs might include: school breakfast/lunch program, special milk program, special food-service program, shopping assistance, congregate meals, home-delivered meals, and food stamp programs. [NOTE TO TEACHER: Presentations should provide information on funding, availability of services, adequacy of services to deal with problems, and areas in which additional services are needed.]

Participate in a debate to analyze a government assistance program. Divide the class into three groups. The groups should represent the points-of-view of various groups in society regarding a food assistance program. Each group should prepare an argument defending their groups' point-of-view (Group A believes the program is too supportive, Group B believes it's not supportive enough, and Group C believes the program is sufficient). Use reliable resources to obtain information. Appoint a representative from each group to report the group's argument. Open up the discussion to determine the classes' feelings toward the program. What changes do class members feel should be made in the program? [NOTE TO TEACHER: To evaluate, ask students to write a one to two paragraph report including which group they were in, whether they agreed with the group's position, the most persuasive argument on each group's side, and improvements proposed for the program.]

c. Programs for elderly

Contact the local health department, extension office, or a religious group to learn about available food assistance programs for the elderly. Volunteer to help prepare and/or serve the meals. Write a report describing your experience. What kind of training does the volunteer go through? What attitudes did you observe in recipients? How nutritious and appetizing were the meals? [NOTE TO TEACHER: Students could extend the volunteering over a period of time for an FHA/HERO project. Instead of writing a short report, the student could record the experience and share with the class.]

In cooperation with the local USDA office, demonstrate to food stamp and commodity food recipients how to utilize commodity and low-cost foods. Include suggestions on how to plan and prepare nutritious meals with these foods. Prepare pamphlets to hand out with shopping tips and recipe ideas.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
3. Complaining effectively a. Constructive complaints	View a transparency of the steps in making a complaint about a food product or service. (See Transparency 39.) Discuss the importance of individual consumer action when products are unsatisfactory or faulty. Give examples of when each step in making a complaint would apply.
	Imagine you bought a frozen pizza with which you were not satisfied. Write a polite but firm letter of complaint to the manufacturer. Include in the letter the basis for your complaint and what you expect the manufacturer to do.
b. Influencing production	Demonstrate how the consumer can influence the production of food products. Display examples of various brands of one product. Examine and compare the taste, texture, color, cost, ingredients, etc., of each brand. Which product would you buy? Write your choice on a slip of paper and place it in a ballot box. Count the votes. Which product received the most votes? Which one got the least number of votes? Predict the future of each product. How might a food producer use consumer input and sales records in making decisions related to specific products?
	Keep a log of the types, forms, and brands of food products that your family consumes. The variety of foods can be found by asking parents what foods they buy, surveying the food storage areas in your home, observing your family's grocery shopper(s), and reading grocery receipts. Make a list of the most common types, forms, and brands purchased. Compare your list with the class. How many items on your list are also on other lists? Discuss how the popularity of certain items and brands affect the item's availability. What would happen if no one purchased a particular item?

COMPETENCY: *Ability to utilize basic skills in kitchen planning and management*

SUB-COMPETENCIES:

Ascertain appropriate procedures for preventing food contamination.

Store food appropriately to preserve freshness and prevent contamination.

Select major kitchen equipment.

Compare energy consumption of various kitchen appliances.

Plan adaptations of kitchen equipment to meet the needs of the physically handicapped.

Plan kitchen work areas.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
D. Basic Kitchen Skills 1. Safety and sanitation a. Food contamination	Discuss and list foods which are easily contaminated by harmful bacteria. Arrange with a biology or chemistry instructor to grow bacteria using one of these foods. Prepare two specimens of the same food and examine them under a microscope. Record a description of each specimen. Freeze specimen #1 and leave specimen #2 at room temperature. After several days, examine the specimens again and record any changes from the first examination. Heat both specimens to at least 165° F. but less than 212°F. Examine the specimens and report additional changes. Discuss how the findings relate to storing and preparing foods.
	Discuss possible sources of food contamination. Work in groups to research the sources. Trace how the contaminants enter the food cycle. What preventive measures are taken to keep foods from being contaminated? How successful have the measures been? How harmful is the contamination to the consumer? Topics might include: pesticides, industrial wastes, additives in animal feeds, additives in human foods, and radiation.
b. Safe storage procedures	View pictures of foods on the bulletin board, a flip chart, or handouts. Categorize the foods according to their keeping qualities. Study resources to identify storage methods to prolong the life of various foods. Discuss safety measures to prevent contamination when using each method of food storage.
	View a transparency of temperatures which control bacteria. (See Transparency 40.) Read recipes for preparing or preserving meats, poultry, fish, eggs, dairy products, and low acid vegetables. What temperature is recommended by each recipe? Do the recipe's recommendations coincide with the temperatures for bacteria control?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Research and write down three food safety guidelines on separate slips of paper. Collect the slips and mix them in a box or jar. Take turns drawing one slip from the container. Read the guideline to the class and explain why it is important to follow. What illness or poison may result if each guideline is not followed?
	Plan a picnic for a Saturday afternoon. Make a list of foods to take. Discuss how each food should be stored. Which foods do not spoil quickly? Which foods must be kept hot or cold? Discuss available containers which keep foods from spoiling such as vacuum or thermos containers, insulated chests, and freezer-jel devices.
2. Selection of major equipment	Brainstorm to list factors influencing the selection of major kitchen appliances. Examples: convenience features; materials used for construction; fuel needed for operation; family needs, wants, and resources; and the time of year the purchase is made.
	Survey homemakers to determine the major kitchen appliances which they consider to be "necessary," "unnecessary," and "convenient." Compare your findings with those of other class members. Which appliances did homemakers disagree on? What factors contribute to their differences? Describe factors that influence a family's kitchen equipment needs.
	Make a price scale for major kitchen equipment. Conduct a survey to see how long various homemakers have used their major appliances. Find published information about the life expectancy for major kitchen equipment. Record this information on the scale along with the original price.
	Take a field trip to an appliance center to compare various types of ranges. Ask the salesperson to demonstrate the differences in the types of ranges. Compare top-of-the-line, middle-, and bottom-of-the-line appliances. Consider differences in materials, construction, fuel, how food is cooked, standard and optional features, ease of use, ease of care, etc.
	Study *warranties* for kitchen appliances. Discuss whether the warranty is full or limited. If the appliance requires repairs within the first 30 days, what will the customer be charged for under both types of warranties? Discuss other differences between the two types. Outline points to check when examining a warranty.
	View a transparency of *energy labels* and *certification seals* to look for on electrical and gas appliances. (See Transparency 41.) Discuss the purpose of energy labels and certification seals. Who requires the information to be provided? How can

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	this information be useful to the consumer? Examine equipment in the foods laboratory unit or at home to find the labels or seals. What other seals or labels can be found on the equipment?
	Work in groups to prepare a check list for buying an appliance suitable for a specific family's needs. Include information such as standard and optional features, cost, installation procedures, guarantees, care, etc., for each type of equipment. "Shop" in an appliance store or catalog for appliances which meet the demands of the check list. Report to the class the type and model of the appliance most closely fitting the family's needs. [NOTE TO TEACHER: Assign various family situations to students including single individual, small family, large family, family with garden, family which eats out often, low income family, moderate income family, and high income family.]
	Construct a rating scale of standard and optional features for major appliances (ranges/ovens, refrigerators/freezers, dishwashers, waste disposals, and trash compactors). Identify the features you feel are "essential," "nice but not essential," and "unnecessary." Discuss whether the features are worth the cost. Select the features you would combine if designing an appliance.
	Imagine you are beginning to prepare a meal in an all electric kitchen when the electrcity goes off. Brainstorm to identify ways to prepare the meal without the aid of electrical appliances. Ideas can originate from museums, history books, camping handbooks, outdoor cooking books, and articles relating to equipment substitutions.
	Research how to build a radiant oven with a cardboard box and foil paper. Plan and prepare a dish in the oven.
3. Energy consumption	Search magazines, newspapers, and bulletins from the extension service and utility companies to identify ways to save energy when using large equipment. Make posters or collages to illustrate the ideas. Post the ideas in the foods laboratory as constant reminders when cooking.
	Visit an appliance center and locate the Energy Guide label on various models of appliances. Consult local utility companies for the energy rate (cost per kilowatt hour) in your area. Compute the cost of running each model. Compare the energy costs and determine which is the most economical in terms of energy expenditure. Compare the energy cost to the price of the appliance. Which model is the most economical in terms of total cost? Prepare charts or graphs showing your findings.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Ask an appliance dealer or a home economist from a utility company to demonstrate and explain new features in kitchen equipment. Compare the energy expenditure of various equipment models. Are newer models more or less energy efficient than older models? Do higher priced models have greater energy savings? Discuss your findings with the class.
4. Adapting equipment	Research specialized kitchen equipment available for the physically handicapped. Based on the findings, work in groups to design or modify a piece of equipment to help the physically handicapped. Based on the findings, work in groups to design or modify a piece of equipment to enable a physically handicapped person to function more efficiently in the kitchen. Discuss each group's final designs.
5. Planning work areas	Read selected references and make a list of factors to consider when planning a work area. Include organization, arrangement, equipment, and storage factors in the list. Share your list with classmates. Compile individual lists for a general list of factors to consider when planning work areas. Study selected references to identify efficient arrangements for work centers in kitchens. Define *work triangle*. Name the three major pieces of equipment which make up the work triangle. Why is the work triangle an efficient arrangement for the work centers in the kitchen? Why is it recommended that the three sides of the work triangle measure no more than 22 feet? View Transparency 51 and discuss the basic shapes of kitchens, the work triangles illustrated in each, and the arrangement of equipment. Name the basic kitchen shapes. Which kitchen shape is usually considered the most efficient arrangement? Why? View Transparency 52 to gain a better understanding of planning the storage space in the kitchen work areas. Discuss why everyday items should be stored close at hand, preferably in the area between waist and eye level. What should be stored in the dead storage space above your head and in deep corners? Where would you store items such as holiday pans and dishes, fondue pots, large roasters, and canning equipment. Discuss storage factors to consider when planning a kitchen for a person in a wheelchair or for a person walking with crutches or a cane. [NOTE TO TEACHER: Storage space to meet special needs can be provided by building a shelf above the sink. Pegboard and magnetic racks can also be used to store items near the sink. Roll-out drawers and pull-out boards under the counters and door-back racks will keep items within easy reach. Cabinet doors which operate by light finger touch are preferable for the physically limited.]

COMPETENCY: *Ability to prepare a variety of foods*

SUB-COMPETENCIES:

Apply knowledge of nutrition and food preparation to pastry and pies.

Apply knowledge of nutrition and food preparation to appetizers.

Apply knowledge of nutrition and food preparation to foreign foods.

Utilize specialized equipment in food preparation.

CONCEPTS — **LEARNING AND EVALUATION EXPERIENCES**

E. Food Preparation
  1. Pastry and pies
    a. Terms

View a film or filmstrip demonstrating and discussing the terms, procedures, and principles involved with pastry and pie preparation.

Discuss the differences between pastry and crumb crusts. What kinds of fillings could be used with the various types of pie crusts?

Watch a demonstration on making pastry. Afterward, discuss the unfamiliar terms used during the demonstration such as single and double crusts, cutting in, fluting, latticing, blistering, meringue, etc. [NOTE TO TEACHER: A worksheet might be developed to pretest students' knowledge of terms related to pastry and pies.]

    b. Nutritional contributions

Look up the nutritional value of your favorite kind of pie in a Table of Food Composition. How many grams of carbohydrates, fats, and proteins are in the pie? Compare the nutritional value of your favorite pie with other pies. Which types of pies have the greatest amount of calories, minerals, and vitamins? Are certain vitamins and minerals not found in pies? Compare your findings with the nutritional value of other foods made with pastry, such as turnovers, eclairs, cream puffs, pot pies, etc.

Identify common ingredients in various types of pastries and pies. What is the purpose of each ingredient? What does each ingredient contribute to the nutritive value of the product? What changes could be made to improve the nutritive value of many pastries and pies?

Find a recipe for pastry or pie which could make a nutritious contribution to the day's diet. Suggest any modifications which could be used to improve the nutritive value of the product.

Make a list of fillings which can be used in pastry and pies. Categorize the fillings as cream, custard, fruit, nut, meat, etc. What special terms are associated with pastry and pie fillings?

Divide into groups to discuss and plan various uses of pastry for breakfasts, main dishes, appetizers, and desserts. Find recipes for each of the dishes. Plan a complete meal around several of the dishes. Consider the nutritional value, appearance, texture, etc., when planning the meals.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
c. Selection, care, and storage	View slides or pictures of pies and other types of pastries. Point out characteristics to look for when selecting the different pastries and pies. What other factors would you consider to assess the quality of these products?
	Take a field trip to a local business where pastries and pies are prepared and/or stored, such as a bakery, caterer, restaurant, etc. Ask about the care and storage provided for various kinds of pies and pastries. Examine the storage areas. At what temperatures are the foods stored? How long before serving are pies and pastries prepared? What ingredients in the foods require special care?
	Review the care and storage guidelines for fruits, vegetables, eggs, milk/milk products, and gelatin. How similar are the care and storage procedures for food products with similar ingredients?
d. Convenience food facts	Brainstorm to list convenience forms in which pastries are available. Compare the advantages and disadvantages of each convenience form and conventional methods of preparation. Suggest situations when each form might be the best to serve. Discuss ways to make convenience pastries using conventionally prepared pastry.
	Choose a pastry dessert, such as a cherry pie, that is available in different forms: ready-to-eat, frozen, packaged mix, turnovers, etc. Purchase each form. Prepare the products by following the directions on the packages. Prepare the same pastry dessert by the conventional method. Sample and compare the pastry desserts. Consider appearance, quality, cost, ease of preparation, taste, and aroma. Rate the products in order of preference.
	Participate in laboratory groups to prepare conventional recipes of pie crusts. Experiment with the recipes by varying the types and amounts of the ingredients to improve the nutritive value of the products. Compare the final products for flavor, texture, flakiness, and tenderness. What are the differences in the final products? Which do you prefer? [NOTE TO TEACHER: See "Bank-A-Budget" by Doris Karls and Elaine Jordan in *Illinois Teacher*, May/June 1978, pages 274-277, for a plan for involving students in laboratory food budgeting.]
e. Principles of preparation	Discuss and practice the principles of pastry, filling, and meringue preparation by making single- and double-crust pies. Examine the pies or pastries. Explain why problems may have occurred. Identify ways to prevent common problems in making pastry, such as tough crusts, soggy lower crust, shrunken crust, crumbly crust, tough and shrunken meringue, pie filling that overflows, and pie filling that does not thicken.
	Find pictures from magazines and cookbooks of ideas for decorating the tops of pies. Look for lattice tops, double-crust pies, pastry cutouts, fluting, and other decorative ideas. Sketch ideas you might want to try. [NOTE TO TEACHER: You may want to develop handouts illustrating ways to decorate pastry.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Plan and prepare meals featuring pastry products such as meat pie, breakfast pastries, or dessert pies and pastries. Make adaptations as needed to improve the nutrition of the product. Evaluate the results. [NOTE TO TEACHER: Each group might plan a different type meal or more than one lab might be planned.]
2. Appetizers a. Terms	Search magazines, cookbooks, textbooks, and other sources for unfamiliar terms related to the preparation of appetizers. Find definitions of the terms in textbooks, cookbooks, and chef dictionaries. Discuss the variations in the definitions. Write definitions of the terms to use in class. [NOTE TO TEACHER: Terms might include: *hors d'oeuvres, canapes, puffs, butter, spread, chafing dish,* and *smorgasbords.*]
	List types of appetizers you have eaten. Classify the appetizers as cocktails, hors d'oeuvres, canapes, dips, or relishes. When were they served? How large were the portions? Explain why appetizers are less hearty than a main dish or accompaniment.
	Invite a professional caterer, chef, or home economist to demonstrate, discuss, and answer questions about appetizers. Ask the speaker to demonstrate preparation of a variety of hors d'oeuvres and canapes. Discuss the characteristics of properly prepared appetizers and key points to consider when planning appetizers.
	View a transparency of a color wheel of fruits and vegetables. (See Transparency 42.) Discuss the importance of color when planning appetizers. Add to the color wheel various kinds of meats, poultry, seafood, cheeses, dips, spreads, breads, and other foods appropriate for canapes or hors d'oeuvres. Plan appetizers for a small party using the color wheel as a quick color guide to create interesting color harmonies with centerpieces and trays. [NOTE TO TEACHER: The transparency suggestions could also be used as a bulletin board.]
	Compare the nutritional contributions of various types of appetizers, including raw fruits and vegetables, cheese, meat, nuts, and other ingredients used in preparing appetizers. Which types of appetizers are most nutritious? Which provide the most calories? The fewest calories? Which would be the best choice if alcoholic beverages are being served?
b. Nutritional contributions	Analyze the ingredients of a given appetizer, such as a pinwheel sandwich filled with a spread made from chopped liver, mustard, pepper, Worcestershire sauce, and mayonnaise on enriched bread. Estimate the nutritional value

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	of the appetizer. Categorize the ingredients by food groups. Compute the number of appetizers one would have to consume to receive a serving of each food group represented. Can you find more nutritious recipes for appetizers? Discuss the importance of considering nutrition when planning appetizers.
c. Convenience food facts	Watch a film featuring the preparation of bite-size appetizers. Note the different types of foods used in preparation. Look up the cost of the foods and compute the total cost of one dozen appetizers. What substitutions for the foods used would decrease the cost? Increase the cost? Search the shelves of a local supermarket for convenience foods which could be used in preparing hors d'oeuvres or canapes. Make a list of the foods and their prices. Plan a menu of hors d'oeuvres and canapes for a small party from the list of convenience foods. Compute the total cost of the foods needed. Suggest ways to reduce the cost if foods prepared at home were substituted for the convenience foods. Which convenience foods cannot be prepared from scratch? Plan a menu of appetizers for a party using convenience foods. Don't forget fresh foods such as carrot sticks, cherry tomatoes, celery sticks, cheese, etc. Prepare the foods. Evaluate the menu for color, taste, shape, texture, ease of preparation, etc. Plan meals which include convenience appetizers. How can appetizers contribute to the total meal?
d. Principles of preparation	Watch a demonstration on preparing various types of canapes and hors d'oeuvres. Work in groups to practice making samples of the appetizers. Brainstorm for ideas to create other variations. Prepare the new creations and share them with the class. View a film or filmstrip on preparing such party foods as finger sandwiches, canapes, and tea cakes. Work in groups to identify other food preparation techniques for preparing foods for special occasions. [NOTE TO TEACHER: You may want to develop a handout or worksheet illustrating ways to cut and decorate finger sandwiches, canapes, and tea cakes.] Select a vegetable, such as carrots, cauliflower, broccoli, tomatoes, peppers, cucumbers, radishes, celery, etc., which is commonly eaten raw. Wash the vegetable thoroughly and practice cutting it into attractive shapes for appetizers. Arrange all the vegetables on a tray and serve them with a dip. Share directions for creating the shapes with the class.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Plan appropriate appetizers for one of the following situations: an after-game get-together, a holiday party for friends, a meal with guests, a family meal, a bridal shower, an organization social. Consider such factors as color, taste, texture, variety, time, and cost. Exchange plans with a classmate and evaluate.
	Plan and prepare appetizers for a party, open house, or other function. Decide how much to spend per person expected, what types of appetizers to include, the number to prepare, and how to serve. Make a market order. Plan a time schedule and division of tasks. Carry out the plan. Evaluate the results. Were the appetizers attractive? Which ones were most popular? Least popular? Were the appetizers attractively served? What would you do differently next time?
	Prepare a basic pastry dough and use your imagination to create a wide variety of appetizers. Extra ingredients such as cheese, nuts, fruits, spices, vegetables, etc., can be added to the dough. Taste the different varieties. Copy down the recipes you like best for your recipe collection. [NOTE TO TEACHER: Ideas to create new appetizers include: mix ingredients in dough, sprinkle ingredients on top of dough, wrap dough around ingredients, fill baked shell with ingredients.]
	Create and prepare appetizers for a bake sale or to serve at a special party for school faculty, a senior citizens group, or a day-care center.
	Plan appetizers for a reception buffet for 100 guests. The only restrictions you have are: 1) spend $2.00 to $3.00 per person, 2) include hot and cold appetizers, and 3) include a wide variety (10 to 15) of easy-to-eat hors d'oeuvres and canapes. Plan the types of appetizers to serve. How much food should be bought? Draw an illustration of how the assembly lines would be organized. Which foods can be prepared and stored before the reception? How should the foods be served? What other factors should be taken into consideration? [NOTE TO TEACHER: It may be possible to prepare refreshments for a community function. Contact local organizations to determine possibilities.]
3. Foreign foods a. Introduction to foreign foods	View travel films from foreign countries showing the culture, tradition, religion, climate, location, economic status, agriculture, etc. Discuss the factors which affect the foods and eating habits of people of various countries. Discuss the similarities and differences between the United States and the other countries.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Make a list of foreign foods popular in your community. Using research materials available in the classroom, the school library and/or the city library, trace the history of several of these food. What foods are normally served together to form a complete meal? Where did each of the foods originate? How common are the foods in other regions of the United States? Discuss why some foreign foods are more common in some regions of the United States than in others.
	Invite guest speakers to class to discuss various foreign countries. Sources of speakers include friends and family of students, student exchange families, travel agents, organizations with overseas employees, universities, or clubs in the community.
b. Regional foods	Divide into groups to research the history of foods and food habits in the major regions of the United States (New England, Middle Atlantic, South, Midwest, West and Southwest, Pacific Coast, and Hawaii). Make a list of the terms and foods that are characteristic of each region. Find pictures of various dishes. Post a large map of the U.S. on the bulletin board. Pin food pictures from each region in the corresponding region on the map. Discuss the development of "American" cuisine.
	Plan a buffet of foods representing the major regions of the United States. Decide the type of dish to represent each region. Divide into groups to find and prepare a recipe for each region. Taste the dishes.
c. Meal patterns in different countries	Choose a country and research its meal patterns and food preparation characteristics. List and define terms related to meal patterns and popular foods in that country. Collect illustrations, recipes, articles, etc., of foods, dishes, and food customs of the country. Make a list of the foods. Visit a supermarket or determine the availability of foods associated with the country in the U.S. Interview a native from the country or someone who has recently visited there. Ask about the customs, traditions, foods, etc.; write a one- to two-page report based on the information learned from the interview. Plan a menu for a typical meal in the country consisting of foods commonly eaten there. Prepare a dish which represents the country for the class to taste.
d. Preparation	Research ways different countries celebrate holidays. Select one of the countries studied and plan an ethnic celebration for an upcoming holiday. Use ideas from the country's traditions to plan foods, entertainment, music, decorations, and dress.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Expand the celebration into an FHA/HERO "Ethnic Day." Divide into groups to research various heritages represented in the community. Work with various departments in the school to plan booths representing the countries. Invite other classes and community members to participate in the activities.
4. Food preparation using special equipment	Divide into groups to conduct a price comparison of special cooking equipment. Call or visit various types of stores (department, discount, specialty, sporting goods, etc.) to find and compare prices, features, and warranties. Compare your findings with the class findings. [NOTE TO TEACHER: Special cooking equipment might include microwave and convection ovens, woks, smokers, crepe makers, slow cookers, fondue pots, tortilla presses, etc.] What equipment could be substituted if the specialized equipment is not available?
	Construct a questionnaire to survey owners of special cooking equipment such as microwave and convection ovens, smokers, woks, crepe makers, slow cookers, fondue pots, dehydraters, etc. Determine questions to ask. Include questions about the number and types of special equipment owned, features, frequency of use, reason for buying, and satisfaction received. Interview the owners and share the findings with the class.
	Research pamphlets and articles on specialized food preparation equipment. Design a one page advertisement for special cooking equipment such as a microwave or convection oven, wok, smoker, crepe maker, slow cooker, fondue pot, dehydrater, etc. What features will you stress? What foods can be prepared in the device? Present your advertisement to the class.
	Divide into groups to develop an introductory booklet for a special cooking device. Include information about suitable foods that can be prepared in the device, definition of unfamiliar terms relating to the device, cookware and/or utensils appropriate to be used, and advantages and disadvantages of the cooking method. Exchange and critique booklets written by other groups. Point out common equipment which could be substituted, if needed.
	Display special cooking equipment and the cookware and/or utensils that should be used with the equipment. Arrange for each device to be demonstrated by an instructor, appliance dealer, home economist, or company representative. What preparation should be done to the equipment prior to cooking? What safety guidelines should be observed when using the equipment? Discuss the kinds of foods and the variety of occasions for which each device could be used.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Plan a buffet of foods prepared with various equipment. Research cookbooks for recipes which can be prepared in a microwave oven, smoker, crepe maker, slow cooker, fondue pot, dehydrator, or other special cooking device. Compare the recipes to recipes for foods prepared traditionally. What changes are there in ingredient amounts, cooking time, etc.? Select a recipe for each device. Prepare and taste the recipes.

COMPETENCIES:

Ability to evaluate commercial food processing in terms of family health

Ability to preserve food for future use

SUB-COMPETENCIES:

Evaluate the use of food additives in processed foods.

Analyze food processing and marketing techniques.

Outline new trends in food processing.

Apply nutrition knowledge and food preparation skills to the home preservation of foods.

Prepare convenience foods at home.

Demonstrate physical and chemical properties of foods.

Show creativity in preparing and serving food.

CONCEPTS

F. Preservation and Processing of Food
   1. Food additives

LEARNING AND EVALUATION EXPERIENCES

Study references or view a filmstrip to summarize reasons additives are used in foods. Which additives are nutritious? Which are not?

Study food labels to compile a list of minerals and vitamins which are often added to foods. Which foods are enriched with these nutrients? Why is it important for these foods to be enriched? Discuss other ways that foods can be nutritionally enriched with additives.

Listen to a dietition describe the food selection difficulties experienced by people with diabetes, heart trouble, and high blood pressure. Why is it important for them to restrict their salt and sugar intake? What foods do they have to avoid? Plan a dinner party for a group of six people; two of the people have high blood pressure and one is diabetic. Rate the menus according to their variety in taste, texture, aroma, and color.

Bring to class packaging containers for cereal, bread, whipping cream, soft drink, milk, chips, ice cream, gelatin, canned soup, candy, mayonnaise, canned fruit, and margarine. Examine the labels to determine the additives used. Make a list of foods that would be available if all additives were banned. Discuss the implications such a ban would have on the consumer. What changes and adjustments would be necessary to maintain a balanced diet?

Examine five labels from food packaging and list the additives. Make a chart comparing the food additives in these five products. Write or call the food processing plants for each of the five products. Ask a company representative from each plant to describe the food additives in their product. Determine why the chemical substances (additives) are needed and their effects on flavor, texture, and keeping quality. Add your findings to the chart.

Study references to interpret laws related to the use of food additives. Explain the laws which regulate amounts of additives used. What effects do these laws have on

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	nutrition? What role does the Food and Drug Administration play in the regulation of additives? What is the significance of the Delaney Clause? View a transparency showing the annual intake of additives in the United States. (See Transparency 43.) Find labels of commonly eaten foods which are high in sugar and salt. Read recipes for preserving foods. What additives do they call for? Discuss the effect that sugar and salt have on foods. What nutritional factors relate to large consumptions of these additives? Suggest ways you could reduce your sugar and salt consumption. Form groups to debate the pros and cons of using additives in processed foods. Consider the benefits and risks relating to the consumer and the industry. Include cost, health, convenience, variety, etc. After the debate, outline guidelines to encourage safe use of additives.
2. Processing and marketing techniques	Tour or view a film of a food processing plant. Determine how food is stored, packaged, and shipped. What kind of machinery is used in the processing? What jobs do employees do? How is the safety and quality of the food product controlled within the plant? Plan a day's diet of nutritious foods you like. Exchange menus with a classmate and analyze the menus. Trace each food on the menu to determine where each food comes from, how it gets to market, how food safety is ensured, and what factors affect cost. Compare your findings with those of classmates. How many foods are from your local region? How many foods must be imported from out of state? Of the country? Discuss the effects of processing on the nutritional value of foods. Discriminate between the terms *enrichment* and *fortification*. Compile lists of food products that are enriched and fortified. Why are these processes necessary? Discuss advantages and disadvantages of food processing as it relates to the nutritional value of foods. Work in groups to trace the steps a processed food goes through on its way to the consumer. Determine how the food is grown, harvested, transported, processed, packaged, stored, and distributed. Present your findings to the class in the form of a poster, bulletin board, flip chart, or mobile. Select a method of food processing to research. Write to a food processing company for information concerning the processing method. Draw a flow chart showing the various steps involved in the processing. Share the flow chart with the class by drawing it on the blackboard or making a transparency. Explain why each step is important.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
3. New trends	Define the terms *artificial, fortified, formulated,* and *meat analogues.* Visit a supermarket and find examples of synthetic foods. Interview neighbors or other adults to determine how well these foods are accepted by consumers. Share your findings with the class. Examine a display of various synthetic and substitute foods, such as diet foods, infant formulas, hospital foods, and textured vegetable protein. Discuss the importance of each food. How do the foods differ from the foods they have replaced? For what populations were the foods developed? What difficulties were encountered when the food was introduced on the market? Research reliable sources to obtain information about future plans for new food products. Assume you are in charge of marketing one of the foods in the U.S. market. Predict the acceptance of the new food by the consumer, processors, and government. What problems may be encountered? Prepare a presentation to introduce the product to your classmates. Discuss the benefits and shortcomings of the product. [NOTE TO TEACHER: Sources might include dietitians, research departments of companies and universities, agricultural extension agents, home economists, FDA, and USDA.] Invite a nutritionist or a chemist to class to discuss the differences between natural and synthetic foods. Ask the speaker to explain the procedure that scientists go through to make synthetic foods. Compare the chemical, nutritional, and economical differences between the two. [NOTE TO TEACHER: Have students prepare questions to ask the speaker in advance.] Assume you are a scientist producing a new food to meet the needs of individuals with eating difficulties. Interview people with special needs to determine what kind of foods are needed. Needs might include problems relating to physical handicaps, nutritional needs, financial difficulties, or limitations in eating environments. Write a brief description of the new food product and a justification for producing the product.
4. Home preservation of foods	View Transparencies 30 and 31 on when fruits and vegetables are in season. Interview a produce manager at a local supermarket to determine the price difference when fruits and vegetables are in and out of season. Why do the prices vary? Discuss situations when buying and preserving fresh fruits and vegetables is less expensive than buying processed foods. When are processed foods cheaper? Discuss commercial and home methods of canning, freezing, and drying foods. Discuss the scientific principles on which each method is based. What agents are used to preserve

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	the foods' color. Compile a list of factors that affect the method used when preserving foods. [NOTE TO TEACHER: Possible factors might include availability of fresh products; amount of food to be preserved; water content of food; acidity of food; maturity of product; quality of product; cost of process; family food preferences; family nutritional needs; and availability of equipment, space, time, and energy.]
	Review the dangers relating to botulism. Study references to determine safety tips to prevent botulism from occurring when canning at home. Summarize your findings by writing a list of guidelines to follow when canning food and before eating it.
	Prepare a display of equipment and packaging materials needed for canning, freezing, and drying foods. Categorize the items according to the type of preservation method with which they are used. Determine how to operate the equipment by watching a demonstration and reading manufacturers' directions. Explain why certain packaging materials are more suitable than others when preserving foods.
a. Canning	Watch a demonstration of canning foods by the water bath (cold pack and hot pack) and steam pressure methods. Outline factors determining the best method to use for canning various foods. Develop a list of foods that can be canned by each method.
	Collect recipes for various kinds of fruit spreads, such as jelly, jam, preserves, conserves, fruit butter, and marmalade. Hold a taste test to compare the color, texture, and flavor of each spread.
b. Freezing	Work in groups to prepare and freeze fruits by several different methods, such as dry sugar pack, pectin pack, syrup pack, unsweetened pack, and liquid pack. Label each container with the method used. After several days, thaw and taste the foods. Compare the color, texture, and flavor. Discuss the kind of anti-darkening agents used in each method. What processes would be followed to freeze vegetables?
c. Drying	Participate in a taste comparison of dried foods. Taste samples of fresh and dehydrated fruits, vegetables, and meats. Discuss the steps in dehydrating foods with a dehydrator, a conventional oven, and the sun. Outline the advantages

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	and disadvantages of each method. Make plans to dehydrate fruits and vegetables using the most suitable drying method for your class. Prepare a presentation to illustrate the various methods to preserve a selected food in the home. Compare the preparation steps, time, equipment needed, and cost of each method. What changes take place in the food's nutritive value, color, shape, texture, and flavor. Present your findings using displays, posters, bulletin boards, flip charts, etc.
5. Making your own convenience foods	Take a field trip to a supermarket to make a list of available convenience foods. Find conventional recipes for each food. Discuss ways that each convenience food could be partially or fully prepared at home and kept for later use. [NOTE TO TEACHER: Convenience foods may include rolls, waffles, casseroles, sauces, soup, stew, pizza, egg rolls, pie shells, cookies, cakes, etc.] Make a list of convenience foods commonly used in your home. Categorize the list according to the type of convenience food: ready-to-serve, partially prepared, or requiring added ingredients. Devise ways that each convenience food could be prepared from scratch and stored in the same form. Discuss the various convenience forms in which foods are available. Example: cookies are available in dry mix, frozen dough, and fully prepared forms. Conduct cooking labs to prepare homemade versions of each form. Package each form and label with the number of servings per package, the cost per serving, ingredients, directions to complete preparations, and other ingredients to add. Prepare and compare the homemade forms to commercial forms. Consider cost, time, taste, texture, color and variety. [NOTE TO TEACHER: Students might work in groups to test various forms of several different products.] Prepare convenience mixes which can be made at home. Examples: master mix, cookie mix, white sauce mix, red sauce mix, chocolate mix, cake mix, pancake mix, brownie mix, cheese sauce mix, chili seasoning mix, corn bread mix, Italian seasoning mix, coating mixes, spiced tea mix. Plan menus utilizing the mixes prepared in class. Example: oven-fried chicken (coating mix), broccoli with cheese sauce, tossed salad with Italian dressing, corn bread, brownies, spiced tea. Prepare the meal and evaluate the results. [NOTE TO TEACHER: Have each group plan a different menu utilizing some of the mixes in different ways when possible.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
6. Physical and chemical properties of food	Define *physical properties.* Study references to identify physical properties of food, such as sensory impressions (color, flavor, smell, texture), boiling and freezing points, solubility, specific gravity, fluidity, viscosity, plasticity, specific gravity, and melting point. What implications do these have for food preparation? Define *chemical properties.* Study references to identify chemical properties of foods. Give examples of some of the main chemical changes that take place when food is prepared either at home or commercially. Include hydrolysis of sugars and starches; fermentation of carbohydrates; cooking of starches; effects of browning; rancidity, hydrogenation, and reversion of fats; coagulation, denaturation, and hydration of proteins; effects of acids and bases; effects of salt; and effects of oxidation. What implications do these have for food preparation? Describe a chemical reaction in food and its result. Examples: Fruit juices may combine with oxygen from air and oxidize, resulting in the loss of vitamin C; protein will coagulate in meat or eggs as they cook; fats will solidify as they are hydrogenated. Demonstrate the effects of chemical and physical properties of foods on their preparation and storage. Suggested experiments: 1) Cut an apple in fourths. Let one piece set out all period or overnight. Wrap another in foil paper and a third in plastic wrap. Treat the fourth with lemon juice or other citrus juice to show how acid can decrease tannin oxidation and improve aesthetic qualities of apples in salads. 2) Cook one portion of frozen broccoli, Brussel sprouts, or cauliflower according to package directions with a lid and another portion without a lid. Taste test both. The one cooked without a lid may taste milder in flavor since sulfur in the vegetables was permitted to escape during cooking. 3) Cook one package of broccoli with lemon juice added. Cook another package in water. Compare the color. Note the drab color when broccoli is cooked in an acid medium. Cook fresh, sliced beets using the same methods. Compare the color. Which is the best method for each vegetable? 4) Cook one pan of carrots in an acid medium. Cook another pan of carrots in an alkaline medium. Note that this color pigment is not changed significantly in either medium.5) Demonstrate the texture and flavor differences of a vegetable cooked the same length of time in a pan with a lid and another without a lid. Note that cooking with a lid shortens cooking time by creating a small amount of pressure and retains more nutrients. The one cooked without a lid may taste raw or uncooked. 6) Taste test a box of cereal which is several weeks old. Compare the flavor and texture of "old" cereal to that of the same type of "new" cereal. Point

out reasons for "off flavors" due to rancidity development. Note change in texture due to deterioration of additives, such as BHT or BHA. 7) Store part of a cream pie, chicken salad, tuna sandwich, or other food containing protein on an agar plate in the refrigerator. Let another part set out several days on an agar plate; then test both for contamination. Conclusions: Protein foods are a good medium for bacterial growth; proper storage is essential to prevent spoilage; do not select custard or cream pies from an unrefrigerated case. 8) Broil a less tender cut of meat; use a moist heat method to cook an identical cut of meat and note tenderness. 9) Simmer one egg at 185° F. and boil one at 212° F. to show effects of heat on protein foods. The boiled egg may be tough and have rubbery white and yolk. The sulfur in the white combines with iron in the yolk producing a greenish coating on the yolk. The simmered egg should be tender and not discolored. 10) French fry some potato slices in butter and others in shortening to show that the burning point of butter is lower than that of shortening.

7. Experimental food preparation

Work in groups to select an area of food preparation, such as protein, sugar, or starch cookery, for an experimental study. Conduct experiments to show applications of various principles of cookery. Example: To show that medium temperature and indirect heat are necessary for preparation of milk products, heat milk in a saucepan at a high temperature until it curdles. Heat another milk sample in a double boiler over medium heat. Draw conclusions. Share with the class.

Study recipes containing several ingredients. Point out the principles of cookery involved in each. Example: Given a recipe for vanilla pudding, determine principles necessary for a desirable product. These would include principles related to heat, thickening agents, amount of liquid, and time ingredients are added.

Play the game "What If." Given a recipe, the first person reads the ingredients substituting or leaving one out. The rest of the class points out the effects of this substitution or omission. If necessary, study references to determine principles of food cookery that apply. The next person may use the same recipe and substitute or leave out a different ingredient. Determine the principles of cookery involved, and continue to the next person.

Interview a home service representative or extension agent to learn procedures used in recipe development. Work in groups to modify a recipe you feel needs improvement. Decide which principles of cookery are involved.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Conduct several experiments with ingredients and procedures to improve the quality. Determine which improvements are best. Prepare the improved recipe several times to ensure consistent results.
	Work in groups to develop a new recipe. Consider the type of product desired, ingredients to be used, proportions, and principles of cookery involved. Modify the recipe until you create a satisfactory product.
	Use score cards and taste tests to evaluate appearance, texture, and flavor of products developed.
	Develop new recipes for your family. Let family members evaluate the acceptability of each product.
8. Creativity in food preparation and service	Collect ideas for creative food preparation and service. Share with the class. List ways one may show creativity in food preparation and service. Examples: garnishes, new methods of preparation, arrangement, and table setting.
	Brainstorm to identify a variety of creative ways for preparing and serving a specific food.
	Describe the role of creativity in food preparation and service. Examples: increasing eye appeal, making basic foods taste better, and providing variety in inexpensive foods.
	Work in groups to use creative ways to prepare and serve a specific food. Determine how creativity in preparation and service improved this food.
	Sponsor a creative cooking contest in your school or community. Invite persons in food occupations to judge the products.

COMPETENCY: *Ability to analyze career and job opportunities*

SUB-COMPETENCIES: *Determine knowledge and skills needed for a food service career.*

Outline procedures for establishing a food service business.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
G. Food Service Career Preparation 1. Knowledge and skills a. Personal characteristics	Study selected references about characteristics a person needs to work successfully in a food related business. List the characteristics, and add your own opinions and ideas about the characterics. Discuss. How do the personal characteristics influence success or failure in business?
	Study a schedule of employees working in food related jobs to determine the activities, skills, and competencies involved in the jobs. Summarize in a paragraph the skills and competencies needed by employees in food related operations.
	Discuss responsibilities associated with jobs relating to food service. What personal characteristics are desirable for these jobs? Consider enjoyment of working with people, preparing and serving food, organization, competence, safety, dependability, ambition, willingness to work hard, health, and physical stamina.
	Select an example of a semiprofessional or skilled job in food service. Determine personal characteristics that are desirable for the job. (Examples: able to work under time pressure, safety, and knowledge of food preparation techniques.)
	Explain in your own words the importance of employees in food related jobs. How may employees' personal qualities affect the populations and customers they serve?
	Interview an employer in a food service establishment (fast food service, restaurant, catering service, bakery, butcher shop, fish market, produce stand, candy store, or cheese store.) Determine characteristics desired in food service employees. Analyze whether you possess these characteristics. How can the characteristics be developed?
	Prepare a bulletin board which portrays the personal characteristics needed by an employee who works in the food service industry.
b. Public relations	Brainstorm to identify the effects public relations may have on a food service establishment. Can public relations

have a negative effect on the establishment. Explain. What role does customer service play in public relations? List the forms of public relations. What effects do public relations have on food preparation, service, speciality, and production industries?

Select from the phone book a food service establishment with which you are unfamiliar. Drive by the facility and observe its appearance. Report to the class. Would you consider eating there? What atmosphere would you expect to find inside? What kind of food would you expect to be served? What are the advantages and disadvantages of making a decision based on the establishment's outside appearance. What other information is necessary? What role does the outside appearance of a food establishment play in attracting customers?

Pretend you have been offered the position of assistant manager in a food service operation. You have to decide whether or not to accept the job. Explain how you would conduct your search. Who would you ask for information? What questions would you ask employees and customers? [NOTE TO TEACHER: Some possible questions students might ask: Are conditions safe, sanitary, and adequate? Are customers satisfied with the service? Do employees enjoy working there? Is there a pleasant and comfortable atmosphere? Are health records kept on employees?] Describe the problems you would encounter if the establishment did not meet your expectations.

Discuss how greeting customers can be linked to positive public relations. Do all employees of a food service operation represent the establishment to the general public? Why? How does employee attitude affect the reputation of the establishment?

Locate several ads for food service establishments, catering services, or specialty food shops. Analyze the ads to determine whether they are appealing and eyecatching. Outline the good and bad impressions that you formed about the operations by just reading the ads. Are these ads examples of public relations techniques? Explain. Share your ideas with classmates.

c. Relationships with customers

Brainstorm to identify ways a food service establishment can foster good public relations with customers. Formulate your ideas into a set of rules. Write the rules on a poster to display in class. Possible rules: 1) Greet customers with a pleasant smile. 2) Be sure customers know you have seen them. If you are busy, say, "I'll be with you soon," in a friendly manner. 3) Accept customers without bias, judgment, or evaluation. 4) Wait on customers in the order they enter the establishment. 5) Give customers plenty of time to make their selections. 6) Write down the order and then repeat it to make sure it is correct. 7) Be prepared to answer questions about items on the menu. 8) Thank customers for patronizing the establishment and invite them back. Discuss the rules with classmates.

Role play a food service employee taking an order from a customer. Discover expectations which the customer may have when buying food. Did your list include appetizing, well-prepared, safe-to-eat, nutritious, and wholesome expectations?

Discuss food characteristics which people expect to find when they eat out. Did your list include appetizing, well-prepared, and safe-to-eat? Devise ways to ensure customers that they are receiving good, wholesome food.

d. Manager's responsibilities

Ask the manager of a food service establishment to describe the manager's responsibilities in the facility. Discuss the manager's responsibilities and problems in dealing with the public, personnel, property, products, procedures, and profit. Is one manager responsible for all the functions of the food service facility, or are management responsibilities shared by several persons? If management responsibilities are shared, who is responsible for each function? How do the manager's responsibilities fit into the steps in the management process shown in Transparency 44?

(1) Sanitation

Listen to a resource person from a food service establishment present reasons for sanitation and safety practices in handling food. What laws promote safe and sanitary practices in public food services?

Interview a supervisor, manager, or a health department official to learn what types of problems are faced in maintaining sanitary food service conditions. What procedures are followed to prevent food contamination and infection?

Visit a food service establishment (restaurant, fast-food service, caterer, etc.) and observe their cleaning and sanitizing equipment. Ask the manager or supervisor about their system and rules for cleaning the equipment. Share your findings with other students.

Observe an employee in a food service operation clean and sanitize his/her work station. Outline the procedures used for cleaning and sanitizing. Evaluate the procedure. Compare and contrast the procedures for cleaning and sanitizing equipment at one work station with procedures used at other work stations. Discuss the difference between cleaning and sanitizing.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Participate in a circular response (class members sit in a circle and take turns responding) to unfinished statements concerning sanitary practices in food preparation and service. Examples: "I dislike a waitress who. . ." "Restaurants should be careful to. . ." "It is important to prepare food in a clean place because. . ." "Food served in a dirty utensil can cause. . ." "Greasy smudges on a drinking glass tell me. . ." Visit a food service establishment and make a list of every item in the establishment which demands cleaning and/or sanitizing. The list might include various equipment, floors, walls, windows, display cases, counters, tables, chairs, ashtrays, salt and pepper shakers, sugar containers, beverage dispensers, etc. Inquire about the cleaning and/or sanitizing procedures for each item. Share your findings with the class. Discuss and evaluate the effectiveness of the various procedures. Find out what laws protect food served in your city. What sanitation ordinances are in effect where you live? What penalties may be involved if regulations are not met?
(2) Safety	Visit a food service operation and make a list of the safety precautions observed by employees. Brainstorm to identify other precautions which should be followed. Work in small groups to prepare demonstrations on how to avoid accidents and injuries. Each group should select a different topic. Topics might include how to prevent slips, falls, strains, cuts, burns, fires, eye injuries, and shock. Outline safety guidelines for your group topic. Prepare a short skit depicting employees not taking precautions and then taking precautions. Present the skit to the class. Discuss the safety guidelines. Examine the contents of a first aid kit. Learn how to use first aid supplies for small cuts, burns, and bruises. Make a list of individuals that should be notified when a serious accident occurs. Discuss the employer's responsibility when one of his/her employees is seriously injured.
(3) Personnel	Interview a food service manager or supervisor to determine the role of employees in the success of the establishment. What percent of the sales dollar is spent on labor costs? How essential is a good employee training program to the operation? Report your findings to the class.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Conduct a survey of the advantages of an effective food service training program. Survey employees and management. Compile lists of the employee and management advantages. Can you think of other advantages to add to the lists?
	Complete the following statements to show how a supervisor could remedy the problem in each of the following situations: "When a trainee does not feel at ease on the job, the supervisor should. . ." "When a trainee does not do the work, the supervisor should. . ." "When a trainee consistantly makes the same mistake, the supervisor should. . ."
(4) Buying	Study resources to find specific information on purchasing beef, canned fruits and vegetables, eggs, and dairy products for a food service establishment. Note how to determine what is needed, sources of supply, product information, packaging, label requirements, grades, and specifications for the products.
	Examine the labels on ten different institutional food products. List the additives found in each product. Research resources to determine the characteristics of the additives. [NOTE TO TEACHER: Have containers with labels for 10 institutional food products available for students. Institutional food products (containers) should be available from the school cafeteria or from local food service establishments.]
	Make a list of the suppliers from which food and supplies are purchased in a food service establishment. Find out the types of suppliers. How many suppliers are used for each type of food? How often are deliveries made? Who serves as buyer in the establishment? Compare your findings with those of classmates.
	Conduct a survey of food service establishments to determine the inspection, receiving, and storage procedures used in each establishment. Compare the procedures used by fast-food services, restaurants, and catering services. How are the procedures different? Give possible reasons why the differences are necessary.
	Observe the container sizes used in food service establishments. In what quantities are the foods purchased? For example: case, pound, and carton. What container sizes are used for various foods?
2. Establishing a food service business a. Defining the market	Brainstorm to identify types of food service business an entrepreneur might consider. Examples: restaurant lunch truck, catering business, speciality food business, or delicatessen. List factors that should be considered before establishing a food service business. Why should you consider characteristics of the community, such as the number of other food service establishments, the

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	average income, the standard of living, and the cultural and religious aspects of the community? Discuss positive and/or negative influences each factor can have. How could these factors influence your decision about opening a food service business?
b. Location	Drive by the exteriors of successful and unsuccessful food service operations. Examine the locations of each operation. List the environmental factors which contribute to the operations' success or failure. [NOTE TO TEACHER: Factors should include traffic; parking; visibility from road; attractiveness; and presence or absence of other food service operations, non-food merchandisers, and potential customers.]
c. Laws and regulations	Use references and guidebooks and/or contact the Small Business Administration to identify the procedures for starting a food service business. What factors affect the location of the operation? What requirements must be met to receive a license to operate? How do Social Security and taxes affect the establishment? Make a chart illustrating the steps involved in starting a food service business? Approximately what percent of new food service businesses fail within one year? Two years? Three years?
d. Staffing	Listen to a personnel supervisor discuss staffing of a food service business. What must be considered when staffing a food service establishment? How do you determine staffing needs? What roles do labor laws and regulations play in staffing? Summarize the factors to consider when staffing a food service business.
	Make a list of terms relating to government laws and regulations directly concerning food service employees. Discuss and define each term. [NOTE TO TEACHER: Terms should include *social security number, W-4 form* (employee's withholding allowance certificate), *W-4E form* (exemption from withholding tax, unemployment insurance, minimum wage), *W-2 form* (wage and tax statement), *4070 form* (employer's report on tips), *work permit, fringe benefits, workmen's compensation, severance pay, collective bargaining, labor unions, civil service,* and *job termination.*]
	Interview a representative from a local employment office or state labor department to learn about labor laws and regulations in your state. Discuss. How do your state labor laws differ from labor laws in other states? Outline the procedures for hiring food service employees.
e. Business procedures	Invite an owner/manager of a food service business such as a restaurant, fast-food establishment, catering service, bakery, meat market, produce stand, candy store, etc., to explain the procedures to follow to start a food service business. Make a list of the procedures outlined by the guest speaker.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Write to your state or the national restaurant association and ask for publications which describe step-by-step processes and methods for establishing and operating a profitable food service business.
	Take an inventory of business skills needed to open and operate a food service establishment. Beside each skill, write the title of professionals who could advise you concerning the specific skill. [NOTE TO TEACHER: The list of professionals might include lawyers, contractors, realtors, bankers, accountants, nutritionists, electricians, health department employees, employment agencies, and other owner/managers of food service establishments.]
	Ask a food service manager to show you the types of financial records kept in a food service establishment. Ask the manager to explain the various parts of the forms. If possible, obtain copies of the forms. Compare the forms to forms used by other food service establishments. Why might the forms differ between types of food service establishments? [NOTE TO TEACHER: Obtain forms from a fast-food service, a restaurant, and a caterer.]
	Make copies of the forms obtained in the previous exercise. Use sample figures for practice in completing balance sheets, profit and loss statements, and break-even analyses.
	Invite someone from the Internal Revenue Service or Small Business Administration to explain the importance of careful recordkeeping in small food service operations. What records are needed to check the financial health of a business? What records are necessary for tax purposes?
f. Facilities and equipment	Visit two or more kinds of fast food services and restaurants. Make a list of the equipment and facilities each operation has. Ask the manager to explain the purpose of each piece of equipment. Compare the different needs of each type of food service operation. How did the equipment differ? Were the facilities for storing, preparing, and serving the foods the same? Explain why differences might occur.
	Work in groups to analyze a menu from a food service establishment. Research to find out what kind of equipment would be necessary to prepare, store, and serve each item. Contact managers or equipment suppliers to determine the cost of the equipment. Compute the total cost of equipment to finance a food service operation serving your group's menu.

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Review resources to find guidelines for organizing a kitchen in a home. Discuss the similarities and differences between the home and commercial kitchen. Consider equipment, food, persons using the facilities, ease of movement, time, and space requirements.

Visit a food service operation. Examine the procedures for preparing foods in each work station. Is the station organized so employees can make the most profitable use of time? Devise a check list of ways to organize a work station to manage time effectively.

Use the information from a prior exercise which determined the needed equipment to prepare foods from a selected menu. Draw a diagram of a kitchen in a food service establishment. Place paper templates of equipment on the diagram. Arrange the templates to utilize time and effort in the best possible way.

SEMESTER COURSE
FOOD AND NUTRITION

COMPETENCY: *Ability to determine nutrition needs of family members throughout the life cycle*

SUB-COMPETENCIES:

Analyze physiological, psychological, and social influences on eating patterns and habits.

Analyze the processes of digestion, absorption, and metabolism in the body's use of food.

Identify nutrients and their functions in the body.

Assess the roles of the recommended daily allowances and the dietary guidelines in achieving a balanced diet.

Discern food fads and fallacies.

Analyze special nutrition needs that occur during a lifetime.

CONCEPTS

I. Nutrition Throughout the Life Cycle
   A. Eating Patterns of Individuals and Groups
      1. Physiological reasons for eating

LEARNING AND EVALUATION EXPERIENCES

Brainstorm to identify physiological reasons for eating: survival, hunger, senses.

Write a paper comparing eating for survival to eating for good nutrition. Examples of eating for survival might be prisoners-of-war, people in underdeveloped countries, etc. Eating for good nutrition usually occurs in situations where a variety of food is readily available to the population. Prove or disprove the above statement (previous sentence) with facts gained from readings.

Define *hunger*. What physical symptoms are present when a person is hungry? Have you experienced headaches or fatigue when hungry? Did the symptoms disappear when food was eaten?

Contact local or state agencies that can provide statistics on the extent of hunger in the United States today. What measures or assistance are available to combat hunger among poverty level groups?

Invite a speaker from a local welfare agency to speak on the topic of "Poverty and Hunger." Ask questions regarding how eligibility for poverty programs is determined, how fraud is identified, the cost of the programs, etc.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Discuss the five senses and their relationship to eating and the enjoyment of food. Which sense probably has the least amount of influence on the selection of food? Why?
	Identify four basic flavors that the taste buds can distinguish. What factors can influence your sense of taste from day to day? Examples: a cold, taking medication, or smoking.
2. Psychological and social influences on eating	Study resources to determine the psychological and social influences on eating. Look for information on the tendency of people to eat because of stress, boredom, depression (mild), anger, traditions based on culture, religion, ethnic backgrounds, and social occasions. [NOTE TO TEACHER: Also see pages 135-144 in *The New Nutrition*, Teacher's Edition, for additional activities on development of eating habits.]
	Participate in a classroom debate of the following topic: "Parents Should Reward Children With Special Foods, Especially Sweets." Discussion following the debate should bring out alternative rewards, the difficulty of changing poor eating habits, etc.
	Discuss the emotional and social influences that may lead to improper or poor dietary habits being established during the teen years. Rate yourself using Transparency 45, "Nutrition Quick Check." How are your dietary habits? Identify areas that you need to improve. Discuss the dangers of eating improperly or dieting during the teenage years.
	Analyze the relationship of personal eating habits to psychological and social influences. Is eating more than just relief from hunger? Do you enjoy eating alone? Do you prefer to eat with peers? Family? What about special occasions? How do you think these traditions started and how are they passed on? What traditions do you think are important to carry on in your own family?
3. Nutrition programs	Use local telephone directories to identify local, state, and federal nutrition programs in your area. Volunteer to contact one of these agencies to obtain information on the services available. What are the purposes and responsibilities of the agency? Who is eligible for the agency's services? Report your findings to the class.
B. The Balanced Diet 1. Nutrients and their functions a. Carbohydrates	Study references on the three types of carbohydrates, sources of carbohydrates, and the functions of carbohydrates. Why are carbohydrates considered the best source of energy?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Look up a definition of one of the following terms related to carbohydrates: *disaccharide, monosaccharide, sucrose, lactose, maltose, glucose, fructose, galactose, polysaccharide, cellulose, simple carbohydrate,* and *complex carbohydrate.* Take turns reading the definitions. How do these terms relate to carbohydrates? Where are you likely to see these terms?
	Discuss health problems that may arise from eating too much carbohydrate and from eating too little carbohydrate. What other nutrients are used by the body for energy when too few carbohydrates are eaten?
	Bring to class articles on the popular "low carbohydrate diet" plan. Identify hazards that may be encountered by users of this diet plan.
b. Fats	Study resources searching for information on fats in the diet. As you study, watch for definitions of the following terms: *lipid, fatty acids, glycerol, saturated, unsaturated, polyunsaturate, cholesterol,* and *linoleic acid.* Outline the functions of fats. Where are you likely to see these terms?
	Discuss the following statements: "Fat in meals keeps you from feeling hungry." "Fat makes a meal more satisfying." Based on your knowledge of digestion and absorption, what makes these statements true? Yet, how can dependence on these statements lead to intake of too much fat?
	Read and report to class on a current article related to fat in the diet. Articles might be on cholesterol, saturated or unsaturated fats, excess calories associated with fats, etc.
	Examine a Nutritive Values of Food chart to determine whether a certain type of red meat is high, moderate, or low in fat content. Which type of red meat is lowest in fat content and highest in linoleic acid? This type of red meat is desirable because it is polyunsaturated. Look for other foods which are high in linoleic acid. Use the information to develop a chart in class on foods rich in linoleic acid. What are the benefits to the body from linoleic acid?
c. Protein	Study references on protein to determine the difference between *complete* and *incomplete protein.* How many *amino acids* are essential (not produced in the body)?
	Discuss the functions of protein in the body. Some people believe that athletes require more protein than nonathletes. Survey participants in various sports in your school. What are their beliefs about protein for athletes?

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Is this belief based on fact or fallacy? What reasons can you cite? [NOTE TO TEACHER: The textbook *Guide to Modern Meals* has a good unit on "Food and Fitness" which details good nutrition habits for athletes.]

Develop a list of food sources high in complete protein and a list of food sources containing incomplete protein. Analyze and price the lists to determine the most expensive and the least expensive sources of protein. Compare the protein content using a Nutritive Values of Food chart. Does the cost of the food have a relationship to the amount of protein? Can adequate protein be provided on a low income budget? Make suggestions for good sources of low cost protein.

Make consumer comparisons of the protein content of prepared foods such as TV dinners, pot pies, etc., versus other sources of protein. Compare the prices of the same items. What conclusions can you draw?

Identify and discuss health problems that may occur from eating too much protein and from eating too little protein. What is *kwashiorkor*? What are the symptoms? Who develops kwashiorkor? Does it occur in the United States? Present a report of your findings in class.

d. Vitamins

Study information in your textbook related to vitamins. Which vitamins are fat-soluble? Which vitamins are water-soluble? Which kind can be stored in the body? Which ones must be replaced daily?

Study information on Vitamins A, D, E, K, C, and the B complex vitamins. Determine each vitamin's functions in the body, food sources, and health problems associated with too much or too little of the vitamin. Develop a word game such as a crossword puzzle, quiz, or word search using this information. Playing the game should help you and classmates learn more about vitamins. [NOTE TO TEACHER: The textbooks *Guide to Modern Meals* and *The World of Food* both contain useful information in chart form on vitamins, food sources, and deficiency problems.]

Write down all the foods you ate in the last three days. Use a Nutritive Values of Food chart and record the amounts of all the vitamins in the foods you ate. Total the amounts and compare to the recommended daily allowances. Were you low in any particular vitamin? Did you have an excess of any vitamin? Evaluate your vitamin intake based on the fact that fat-soluble vitamins can be stored in the body but water-soluble vitamins must be replaced daily. If you were low in any vitamins, find a food source high in that vitamin and plan to eat some of that food today. Can an excess of the fat-soluble vitamins be harmful? [NOTE TO TEACHER: See pages 7-10 in *The New Nutrition*, Student's Edition, for forms for recording dietary intake.]

Bring to class articles from current publications on the topic of vitamin supplements. Give a brief report on the article and discuss in class. Were the articles valid? Was the author an expert in the field of nutrition? Was the intent of the article to inform or to sell a product? Are vitamin supplements necessary if a varied, balanced diet is followed?

e. Minerals

Study resources on *minerals*. Which minerals are designated as *macrominerals* (found in large amounts in the body) and which ones are *microminerals* or *trace elements*?

Identify and discuss the functions of minerals in the body. Which minerals aid in the development of strong bones and teeth? Which minerals help regulate other body processes? Which one helps the thyroid gland function properly. Which one prevents anemia? What other functions do minerals perform in the body?

Examine a Nutritive Values of Food chart and compile a list of the best food sources for each mineral. How many of these foods do you eat regularly? Do you know anyone who has had a deficiency of a particular mineral? If so, what changes did they have to make in their diets?

f. Water

Study resources to determine the importance of water in the diet. What percent of body weight is made up of water? How much water is recommended for each day? Why is it important to consume this much water each day? About 54 percent of the water needed is consumed as liquid; 37 percent comes from the food eaten. Where does the remaining 9 percent come from? How long can a person survive without water? How long can a person survive without food if they have plenty of water? Use this information to develop a bulletin board.

Identify and discuss the functions performed by water in the body. Include the regulation of body processes, the regulation of temperature, and water's role as an essential element of body fluids, blood, and all cells.

Prepare a skit on nutrients and their functions to present to another class or at an elementary school. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Recommended Daily Allowances	Study information in references regarding the RDA (Recommended Daily Allowances). How does the RDA differ from the U.S. RDA? What group decides on the RDA's and how often are they revised? When were they first established? [NOTE TO TEACHER: Also see pages 43-50 in *The New Nutrition*, Teacher's Edition, for additional activities on RDA.] Using a 1980 revision of the RDA, look up the daily allowances for each member of your family. Record the allowances for each nutrient and make special notes where differences occur due to sex or age. Which family member has the highest recommended allowances? Why? Does the exact allowance have to be met every day by each person? Discuss in class why only 17 nutrients have recommended allowances listed in the RDA. Examine the 1980 chart which lists Estimated Safe and Adequate Daily Dietary Intakes of Additional Selected Vitamins and Minerals. Why are these nutrients not included in the RDA? What are toxic levels of some trace elements? Develop a display using food models and comparison cards of a day's diet for an adolescent boy and girl. [NOTE TO TEACHER: Food models and comparison cards are available from Dairy Council, Inc. See Supplement at end of Semester Course for details.] Analyze three day's food intake for yourself. Write down everything you consumed in liquids and foods (including amounts). Figure the nutrients and calories for each item. Total the items and compare to your RDA. How did you do in meeting the requirements? Was the food intake typical or was it unusual? Are allowances built into the RDA's? [See pages 7-10 in *The New Nutrition*, Student's Edition, for charts on which students can record their three-day food intake.]
a. The Daily Food Guide	Study references to find information on the Daily Food Guide. What are the four groups of foods that have specific recommended servings? Which group does not have recommended servings? How can becoming familiar with the Daily Food Guide help in planning meals? [NOTE TO TEACHER: See pages 5-15, *The New Nutrition*, Teacher's Edition, for additional activities on the Daily Food Guide.] Plan and prepare nutritious snacks. Sample menu: fruit/cheese platter, peanut butter/cereal bars, milkshakes. Evaluate the snacks prepared in terms of your own nu-

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	tritional needs. How are nutritious snacks different from empty-calorie snacks? What contribution do snacks make to your total day's food intake in terms of calories? In terms of nutrients supplied? [NOTE TO TEACHER: See Supplement at end of Semester Course for details.] Use food models to prepare an exhibit of a typical meal from one of the following: school cafeteria, fast-food restaurant, foreign food restaurant, gourmet restaurant. Evaluate the menus for contribution to daily dietary needs. [NOTE TO TEACHER: See Supplement at end of Semester Course for details. The exhibit could be used as part of Vocational Education Week exhibits or a hall exhibit for a Parent Teacher Association meeting.]
b. U.S. RDA's	Discuss in class the U.S. RDA's relationship to the RDA. What is the U.S. RDA used for? Which eight nutrients must be included on food labels? Which foods must have nutritional labeling? View a filmstrip or Transparency 5, "Food Labels." Are the eight nutrients included? Is this a required label or an optional label? Discuss the amount of nutrients included in the product. Does it provide 100 percent of any nutrient? Are the amounts reasonable considering that other foods will be eaten during the day? Examine labels on food packages in your home kitchen. Make a list of the kinds of foods with required nutritional labels. How many different ones did you identify? Share with the class.
3. Dietary Guidelines for Americans	Discuss the development of the Dietary Guidelines for Americans. When were they prepared? Why were the guidelines developed? [NOTE TO TEACHER: *The New Nutrition* developed by the Home Economics Instructional Materials Center is based on the seven dietary guidelines for Americans. Each section of the teacher's guide includes objectives, resources, key words, introduction, suggested activities, teaching aids, and tests. The student guide includes a variety of activities and exercises for the student to complete.]
a. Eating a variety of foods	Discuss why eating a variety of foods from each food group is essential to good health. Is there a "perfect food" that contains all nutrients in correct proportion? Is it necessary to take vitamin and mineral supplements if you eat a well-balanced diet and are in good health? Interview five students in the school cafeteria and record the kinds of vegetables and fruits they have eaten in the last 24 hours. Compile a list in class of all the different

vegetables and fruits selected by the teens interviewed. Indicate by each the number of times selected. Look up the Vitamin C and Vitamin A content of the top ten selections in a Nutritive Values of Food chart. Rate each food as poor, good, or excellent sources of Vitamins C and A. How many of the top ten selections are excellent sources of vitamins? How many are poor sources? Do most teens choose a good variety of fruits and vegetables? If not, how could they be encouraged to select better sources of Vitamins A and C?

Analyze your own selections of fruits and vegetables. Are *you* eating the correct number of servings per day? Are the fruits and vegetables you select good or excellent sources of vitamins?

Develop posters, in small groups, which would encourage teens to broaden their selections of fruits and vegetables. Arrange to have the three best posters displayed in the hall or in the cafeteria. [NOTE TO TEACHER: This activity might be used for FHA/HERO. Posters could be prepared by members for display in schools or the FHA/HERO chapter might sponsor a poster contest and have others develop the posters.]

Review the nutrients provided by whole grain and enriched breads, cereals, and grain products. What are the three major nutritional contributions of this food group? How many servings per day are recommended for teens? Is the recommendation the same or different for males and females?

Study resources to find information on the variety of grains used in the United States for food. Which two are the most popular? In what states are these grains grown? What grains are the most popular in other parts of the world?

Examine the shelves of flour and flour products at your favorite supermarket or health food store. Record the number of wheat flour products available along with the unit price of each type product. Give a report in class and listen to reports from other students. How many different kinds of wheat flour products are available in your area? Do the prices vary significantly? [NOTE TO TEACHER: Some students could be assigned to check the forms, nutrition labels, numbers, kinds, and prices of cakes, cookies, pasta, and breads available.]

Survey students to determine their favorite dairy products. How many drink milk each day? How can people who are allergic to milk get an adequate amount of the nutrients supplied by milk? Compare your findings with those of classmates. Make some recommendations of foods and amounts of those foods that would have to be eaten to equal the nutrients in one glass of milk.

Participate in a cheese-tasting party. Discuss the kinds of cheeses which are familiar. How are they used? What kinds of foods have cheese as a significant ingredient? Look in recipe books for suggestions if necessary.

Investigate the cost of milk and milk products in your area. Obtain prices for the various products and figure the cost per serving. Participate in a taste test of various milk products. Include fresh whole milk, low-fat milk, powdered milk, canned milk, bulk cheese, packaged cheese, sliced cheese, and grated cheese. How can good nutrition be achieved on a low-income budget? How much does cooking with non-fat dry milk save?

Study references to learn more about sources of protein. Do lower priced cuts of meat contain the same amounts of protein as expensive cuts such as steaks and roasts? Are chicken and fish usually less expensive than beef? Is the protein from legumes complete or incomplete? What two reasons would prevent using nuts as a meat substitute? (price and high fat content, hence more calories)

Look up the nutritional content of eggs. Would eggs be more or less expensive than meat as a main dish for a family of four? Suggest some main dishes that can be made from eggs for meals other than breakfast. Share findings with class.

Work in groups to study and report on foods eaten in a region of the United States. Select one dish to prepare representing the region you studied or invite a person familiar with foods in the region to prepare a dish for tasting. How can appreciation of foods from other regions of the United States provide variety in one's diet? [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

Work in groups to study and report on foods eaten in another country. Select one dish to prepare for a foreign food tasting event or invite a person familiar with foods from the country to prepare a dish for tasting. How can appreciation of foods from other cultures provide variety in one's diet? [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

CONCEPTS	**LEARNING AND EVALUATION EXPERIENCES**
b. Maintaining ideal weight	Discuss in class the major nutritional problem in the U.S. (overweight). Why are so many people overweight? What has changed in our diets and life style to create or contribute to this problem? [NOTE TO TEACHER: Also see pages 121-133 in *The New Nutrition,* Teacher's Edition, for additional activities on nutrition and health.] Determine your own ideal weight by referring to height and weight charts. (See Transparency 17.) Using this information and your activity level, figure out how many calories per day are needed to maintain your present weight. If you are above or below your ideal weight, make a plan for improving plus a reasonable time schedule for achieving your goal. [NOTE TO TEACHER: See pages 90-91 in *The New Nutrition,* Student's Edition, for information on body frame type.] Read articles on fad diets in magazines or listen to TV commercials about diet plans and groups. Report on the diet you read about and the claims made. Based on good nutrition knowledge, what problems with health may occur from following this type of diet over an extended period? What is the only sensible way to lose weight? How much should one plan to lose per week? Identify health problems that may arise from being overweight. Include high blood pressure, strokes, heart attacks, diabetes, high cholesterol, etc. Look for statistics on the numbers of Americans having these problems. Report to class. Study the role of exercise in controlling weight. Invite a guest to demonstrate aerobic exercises. Watch a demonstration of a sound exercise program. Are there any classes offered in your area related to aerobics? If so, how many people are involved? How many people jog in your area? What is the most popular form of exercise with teens? [NOTE TO TEACHER: Also see pages 161-173 in *The New Nutrition,* Teacher's Edition, for additional activities on weight control.] Look up the calories contained by various forms of similar foods. (NOTE TO TEACHER: Assign such foods as the following: MILK AND MILK PRODUCTS–ice milk, ice cream, or vanilla milk shake; skim milk, 2% milk, or whole milk: MEAT AND LEGUMES–lean hamburger, regular hamburger, cheeseburger; chicken (broiled, without skin); round roast, rib roast; BREAD AND CEREALS–cooked noodles, ravioli with cheese sauce, lasagna; wholewheat bread, 2-inch biscuit, cake doughnut; VEGETABLE AND FRUIT GROUP–cooked cabbage, coleslaw, stuffed cabbage; FATS, SWEETS, AND ALCOHOL–sugar, syrup, cola, angel food cake,

chocolate cake with chocolate icing, cheese cake with cherry topping; low-calorie French dressing, French dressing, blue cheese dressing.) What do your findings tell you about the role of food selection in weight gain or loss?

Observe a display of the following: 1 lb. fat (3500 calories). How many calories would you need to cut or add to your diet to decrease or increase your weight by one pound in a week? Adjust the dietary recall you made earlier to reach that goal. Could you have consumed foods in a different form? What foods could you add or subtract from your diet?

Plan a diet and exercise clinic. Develop sample menus appropriate for teenagers. Prepare handouts on diet and weight. Work with the school nurse and P.E. teacher to develop exercises. Set up a weekly session for participants. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

c. Avoiding too much fat, saturated fat, and cholesterol

Discuss in class the research finding that Americans in 1976 were getting 31 percent more calories from fat than Americans did in 1910. What has caused this tremendous increase in fat consumption? [NOTE TO TEACHER: An excellent resource for up-to-date research findings on American's diets is "The Changing American Diet" by Letitia Brewster and Michael F. Jacobson, Ph.D., published by Center for Science in the Public Interest, 1755 S Street NW, Washington, DC 20009.]

Study resources to review the classifications of fats. What is the difference between polyunsaturated fats and monounsaturated fats? What is saturated fat? Which type is associated with high cholesterol levels? What foods contain each type of fat?

Use a Nutritive Values of Foods chart to identify twenty food items that are high in saturated fat. Which of the twenty items were surprising to you? Share your list with the class. Compile a class list of ten foods from each food group. Which are high in saturated fat and would need to be limited by persons with high cholesterol levels?

Develop a list in class of ways to avoid too much fat, saturated fat, and cholesterol. Include items such as: 1) select more poultry, fish, dry beans and peas, and lean meats for protein, 2) use eggs, liver, and shellfish in moderation, 3) limit butter, cream, hydrogenated margarine, shortening, coconut oil, and foods made with these products, 4) trim fat from meats, 5) roast, broil, bake, or boil rather than fry, and 6) read labels to determine the amount and types of fat in foods. [NOTE TO TEACHER: Also see pages 201-218 in *The New Nutrition*, Teacher's Edition, for additional activities on avoiding too much fat.]

Arrange a display of foods containing fat (include foods with hidden fat). Include some uncooked meats so that differences in fat can be noted and saturation of fatty acids discussed. Use books and charts to determine amount of fat in foods shown and kcal from fat. Group foods by content of mostly saturated fats or mostly unsaturated fatty acids. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

d. Eating foods with adequate starch and fiber

Participate in a discussion of the following facts: the American diet in 1976 showed the consumption of complex carbohydrate (starch) to be 43 percent less than in 1910 and at the same time the diet included 50 percent more simple carbohydrate (sugar). Do these facts relate to the frequency of diabetes, obesity, stroke and heart disease, all of which are prevalent in American society? [NOTE TO TEACHER: Facts presented are from "The Changing American Diet," by Brewster and Jacobson.]

Study resources to find information on the importance of including fiber in the diet. Report to the class on your findings. Suggest a list of specific foods to be included in the average diet to increase fiber content. What health problems may occur if the diet is too low in fiber? Weigh the advantages and disadvantages of fiber in the diet. [NOTE TO TEACHER: Also see pages 219-230 in *The New Nutrition*, Teacher's Edition, for additional activities on eating foods with adequate starch and fiber.]

Analyze television food commercials which mention starch or fiber. How many encourage the use of more starch and fiber in the diet? Write letters to the appropriate companies complimenting their useful commercials or complaining about commercials that do not promote good eating habits.

Submit your letter to your teacher for evaluation and approval before mailing.

Work in pairs to prepare nutritious snacks containing carbohydrates. Suggested menu: cheese and crackers, Texas Trash, vegetable sticks, fresh fruit with cream cheese dip, and fruit punch. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

CONCEPTS	**LEARNING AND EVALUATION EXPERIENCES**
e. Avoiding too much sugar	Study articles on sugar consumption. How many pounds does the average American eat in one year? How much per day? What health problems, other than tooth decay, may result from consuming too much sugar?
	Study labels on a variety of food products and identify the sugars that have been added. Ingredients are listed on labels according to weight and decreasing order. If sugar (or fructose, sucrose, lactose, honey, maltose, molasses, etc.) are listed among the first three ingredients, then the amount can be considered significant. [NOTE TO TEACHER: Provide various food packages or ask students to bring them, including some of the following: crackers, ketchup, bread, soup, cereals, peanut butter, cured meats, salad dressings, spaghetti sauce mix, etc.]
	Invite a local dentist or dental hygienist to speak on "The Relationship of Tooth Decay to Consumption of Sugar." Ask questions about how to reduce the incidence of tooth decay.
	View Transparency 46 on "Sugar Content of Breakfast Cereals." Discuss the role these cereals may play in teaching children to like sweet food. Based on the recommendation that cereals should contain 10 percent or less sugar, select some that would be good for children. Watch cartoons and see how many sugar coated cereals or other high sugar foods are advertised when children are likely to be watching.
	Construct guidelines for cutting down on sugar. Include suggestions such as: nibble on fresh fruits and vegetables rather than candy and cookies; limit the number of soft drinks; reward children with treats other than sweets; use spices for flavor instead of sugar; read labels to determine sugar content; eat more fresh fruits, etc. [NOTE TO TEACHER: Also see pages 231-245 in *The New Nutrition*, Teacher's Edition, on avoiding too much sugar.]
f. Avoiding too much sodium	Participate in a class discussion on the amount of salt consumed by Americans. Research shows that average Americans consume from two to four teaspoons of salt per day. The actual amount needed by the body is about one-tenth of a teaspoon. The RDA recommends about one teaspoon of salt per day for adults. What health problems are associated with a high level of salt consumption? What is the toxic level of salt?
	Study articles about the new low salt foods being introduced on the market. How does the processing of these

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	foods compare with other foods? How do the tastes compare? What caused these foods to be introduced? Are they being accepted? How do the costs compare with other foods?
	Investigate the amount of salt in the water supply of your town. Call the city water department for information. Does the use of a home water softener increase the amount of salt in the water? If so, how much is the increase?
	Examine the use of salt tablets by athletes. Research current findings and recommendations regarding the dangers of taking salt tablets. Watch a demonstration on how the body's cells lose more water when a high concentration of salt is present. Observe the effects of salt on lettuce and cucumber slices. The loss of water caused by the salt results in wilting. High salt doses in the body cause similar effects exhibited as weakness. [NOTE TO TEACHER: Some suggested references for this activity are *Jane Brody's Nutrition Book; The Sportsmedicine Book,* by Dr. Gabe Mirkin and Marshall Hoffman, (Boston: Little, Brown, 1978); and "Salt: A New Villain," *Time Magazine,* Vol. 119, No. 11, March 15, 1982.]
	Identify food sources containing "hidden" high levels of salt. Check articles on salt in recent magazines such as *Consumer Reports, Woman's Day, Family Circle,* etc. Did you know that a serving of tomato juice has as much salt as a serving of bacon? Chocolate pudding made from a mix has more salt than salted peanuts per serving? Cottage cheese contains 435 mg. of salt per serving? Participate in preparing a class chart or poster depicting the foods with a high salt content. [NOTE TO TEACHER: Also see pages 247-259 in *The New Nutrition*, Teacher's Edition, for additional activities on avoiding too much sodium.]
	Plan a display or tasting session using foods high and low in sodium. Work in groups to prepare high and low sodium foods. Find the sodium content of each and discuss with the class. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]
g. Drinking alcohol, in moderation, if at all	View a filmstrip on responsible alcohol use. Define moderation in drinking. How many drinks per day are considered a "moderate" number? How rapidly can the body metabolize alcohol? If too many drinks are consumed, how long will the recovery time be? Does coffee really help sober up people who have had too many drinks?

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Identify health hazards related to drinking too much alcohol over a period of time. Include such things as cirrhosis of the liver, birth defects, nutrient deficiencies, a decrease in male potency, and obesity.

Invite a local law enforcement officer to speak to the class on the effects of alcohol on driving. Ask for current statistics on the numbers of accidents and the numbers of fatalities per year associated with drunk driving.

Participate in either of the following FHA/HERO peer education projects: "Healthy Babies: Chance or Choice" or "The Student Body." [NOTE TO TEACHER: The national FHA/HERO headquarters has materials available including several films, publications, and other materials from the March of Dimes on the effects of alcohol on the human body. A number of resources are listed in *Tips and Topics*, Vol. XXII, No. 2, on Alcohol–Its Use and Abuse.]

Study the effects of alcohol on nutrition. Discuss in class the effects on appetite, and absorption of nutrients, especially vitamins and minerals. How many calories are in one ounce of liquor? Why is the term "empty" calories applied to the calories in alcohol?

View a March of Dimes film or read articles on Fetal Alcohol Syndrome (FAS). Write a report on the cause, symptoms, and effects of this problem.

Work in groups to develop guidelines for safe social drinking. Include suggestions such as: always eat before drinking; sip drinks very slowly (one per hour is a good rule); dilute the drinks with lots of ice and water or juice (carbonated mixers speed up the absorption of alcohol); know your capacity and stick to it; never mix drugs with drinks (the effect can be fatal); and recall that it takes one hour per drink consumed recovery time. [NOTE TO TEACHER: Also see pages 261-276 in *The New Nutrition*, Teacher's Edition, for additional activities on moderation in alcohol consumption]

Conduct experiments using mice to determine the effects of high intakes of fat, sugar, sodium, fiber, and alcohol. [NOTE TO TEACHER: Use the forms on pages 148-151 of *The New Nutrition*, Student's Edition, for recording the weight, length, and appearance of each mouse weekly.]

C. How the Body Uses Food
   1. Digestion

Study resources for information on the digestive system. Where does digestion of food begin? Where does digestion end? Look up definitions for the following terms related to digestion: saliva, ptyalin, peristaltic waves, gastric juices, duodenum, jejunum, ileum, and bile.

View "The Digestive System," Transparency 32, and be able to identify the parts related to digestion. [NOTE TO

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	TEACHER: This master could be reproduced as a handout and used for evaluation, if desired. Also see pages 31-42 in *The New Nutrition,* Teacher's Edition, for additional activities on digestion.] Divide class into three groups to research digestion of carbohydrates, proteins, or fats. Report findings related to major organs where the food is digested, other glands or organs that are utilized to aid digestion of the selected nutrient, and how much time is involved. Locate and report on articles in current magazines on health problems related to the digestive tract. Examples: hiatal hernia, ulcers of the stomach and small intestine, anorexia nervosa, problems related to prolonged induced vomiting, bulimia etc. Discuss the reports as presented. What types of diet restrictions or additions are recommended to assist in correcting these problems?
2. Absorption	Define the following terms related to absorption: *villi, amino acids, fatty acids, glycerol, glycerides, glucose, blood plasma,* and *absorption.* Study resources or view a film to identify how absorption of nutrients takes place in the small intestine. What are the villi? How do the nutrients reach the liver for processing? What nutrients are changed into glucose by the liver? When extra glucose is in the liver it is called glycogen. How is glycogen used in the body? How is excess glucose stored? Discuss in class the transportation system by which the nutrients processed by the liver reach the body cells. Which body organ is involved in this system? Diagram and explain the steps involved in the digestion and absorption of the last meal you ate. [NOTE TO TEACHER: This exercise could be used as an evaluation technique.]
3. Metabolism	Study resources to become familiar with the process of metabolism. What are the three tasks that the nutrients perform during metabolism? Where does metabolism take place in the body? Discuss in class the standard measure for energy (*calorie*). How many calories are available from one gram of carbohydrate? One gram of protein? One gram of fat? View a film or filmstrip on the building and repairing of body cells. Look for explanations of the terms *nucleus, DNA,* and *RNA.*

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Define the following terms related to regulation of body processes: *hormones, enzymes,* and *coenzymes.* What nutrients make up the hormones and enzymes? What nutrients make up the coenzymes? Explain the function of each of these body regulators.
	Prepare posters, or bulletin boards, to illustrate the functions of hormones, enzymes, or coenzymes.
D. Food Fads and Fallacies 1. Fad diets	Survey the number of diet books at your local bookstore or supermarket. How many different diet books did you see? How many businesses related to weight loss are currently in your town? Look for advertisements in the newspaper and on television. Share information in class. Why is dieting big business?
	Look up the definition of the word *fad*. What is a fad diet? Do you know anyone who is currently following a fad diet? What are the limitations of the diet? Take a survey to see how many students in your school have ever been on a fad diet? List the different diets.
	Compare the characteristics, advantages, and disadvantages of various fad diets including such diets as The Complete Scarsdale Medical Diet, The Doctor's Quick Weight Loss Diet, The Stillman Diet, The Water Diet, The Pritkin Program, The Live Longer Now Diet, The Maximum Weight Loss Diet (1978), The Permanent Weight Loss Diet (1981), The Woman Doctor's Diet for Teenage Girls, Weight Watchers, Dr. Atkin's Diet Revolution, Fasting Diets, The Zen Macrobiotic Diet, The Mayo Diet, The Beverly Hills Diet, and The Liquid Protein or the Last Change Diet. Is the diet nutritionally balanced? If not, why? [NOTE TO TEACHER: See *Males in Home Economics Classes* for Fad Diet Summary on pages 100-102.]
	Write articles for a school paper on *hazards* to health in following fad diets which are not balanced and which often eliminate foods from one group or another. For example, the Beverly Hills Diet can cause severe diarrhea, potassium deficiency, and heart arrhythmia; the Cambridge Diet reduces calories to a level which can cause the body to burn lean muscle tissue (including the heart) for energy. Prepare a chart or write a brief article using the facts you have identified.
	Look for advertisements on gimmicks or gadgets that supposedly help people lose weight. Are the items expensive? Do the claims sound reasonable or exaggerated? Call the Better Business Bureau and ask for information on the companies involved.

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

Study resources to determine a safe and sound weight loss method. Be certain the information is accurate. Most foods should be eaten from the four essential food groups and in moderation from the Fats, Sweets, and Alcohol Group. Be wary of any weight loss method that says more than two pounds per week can be lost. Should exercise be included in a weight loss program? When should a doctor be consulted?

Prepare a meal from a day's menu of one fad diet. Use the Daily Food Guide to analyze the meal. Suggest low-calorie foods to improve the nutritive value of the diet. Determine the caloric value of the meal. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

2. Food and nutrition quackery

Study resources to determine what is meant by the term *food quackery*. Give some examples of misinformation regarding food, nutrition, or dieting that you know of or have read about. Use the information obtained to develop a bulletin board.

Discuss in class the dual dangers involved when fraudulent claims such as "It will cure cancer" are made for a food product. Consumers may spend large sums of money on products which have not been proven to do what is claimed. At the same time, consumers may not seek medical help or reject help until it's too late. How can consumers determine the reliability of nutrition information?

Define *organic* food. What do people actually mean when they refer to organic food? Are there any government regulations to prevent fraud in the selling of organic foods? Is there a proven nutritional difference between foods grown organically and foods grown with chemical fertilizers and chemical pest control methods? Is there any difference in the taste of foods produced organically? Why are organically grown foods more expensive?

Visit a health food store and record the price per pound of the following foods: cornmeal, granola, honey, peanut butter, cereal, salad oil, salt, dry milk, tomatoes, cider vinegar, and whole wheat flour. Check the prices of the same food items in the same quantity at a local supermarket and at a convenience store. How do the prices compare? Prepare and display a chart showing the results. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

Interview the owner or manager of a health food store to determine if the store furnishes affidavits or reports of

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	scientific tests by independent laboratories attesting to the freedom from pesticides and additives. Examine an affidavit or lab report to see what information is provided.
	Listen to a nutrition expert compare health foods and other foods. What are the advantages and disadvantages of each?
	Define *supplements* and *additives.* Identify some common food additives and supplements. What is the difference between additives and supplements? Would it be practical to revert to unprocessed, additive-free foods? [NOTE TO TEACHER: This assignment can be kept general on all additives or supplements or each student might select a specific topic to research.]
	Conduct a taste test of "natural" foods and foods with additives. Can you tell any difference between them?
3. Reliable sources of information	Examine articles and books on food and nutrition. How can you tell if the article or book is reliable? What are the credentials of the author? Is the person a registered dietitian? Is the person's opinion supported by others in the field? Does the article or book promise cures or amazing results?
	Identify sources of reliable general information related to food and nutrition. Examples: county extension services, department of nutrition at colleges and universities, local health departments, the American Heart Association, the American Dietetic Association, and the American Diabetes Association. The U.S. Departments of Agriculture and Health and Human Services also provide many bulletins related to food and nutrition which are either free or inexpensive.
E. Special Nutrition Needs 1. Pregnancy	View Transparency 47, "Increase Nutrients During Pregnancy." Discuss the amounts and kinds of food necessary to achieve the nutrient increases. Refer to a Nutritive Values of Food chart for specific information.
	Invite a consulting dietitian or school nurse to speak to the class on "Nutrition During Pregnancy." Ask questions regarding weight gains, when to increase nutrients in the diet, what foods to avoid, number of servings from each food group, etc.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Plan a day's menus for a mother-to-be which includes an extra 300 calories and the correct nutrients. Be sure to count the nutrition and calorie contents of liquids and snacks. Turn in for evaluation.
	Review information related to consuming alcohol during pregnancy. How much is safe? Would the extra calories from drinks make it difficult to stay within the 300 extra calorie limit? Remember that alcoholic drinks provide empty calories. How would these empty calories affect obtaining the additional nutrients necessary during pregnancy? What dangers does alcohol present to the unborn child?
	Study information related to consuming large amounts of caffeine during pregnancy. How does caffeine affect the fetus? What symptoms can be exhibited by newborns addicted to caffeine?
	Find information related to morning sickness, heartburn or indigestion, constipation, and edema which are often complaints during pregnancy. Make suggestions for dietary changes which can alleviate these complaints.
	Study the functions performed by the placenta and the umbilical cord during gestation. Explain how the placenta functions as lungs, liver, and intestines. How many arteries are in the umbilical cord?
	Analyze information on problems that may occur when teenagers who are still in a growth and development stage become pregnant. What special dietary adjustments would be necessary to provide adequate nutrition for both the mother and the developing infant?
	Give a report in class on the dangers of smoking and taking drugs during pregnancy. How are these substances related to the nutrition of the fetus? How is the fetus affected?
2. Young children	Study resources on feeding infants from birth to one year. What are the advantages and disadvantages of breast feeding? What are the advantages and disadvantages of formula feeding? Which method is currently the most popular?
	Determine the cost of feeding an infant for one year on a commercial formula diet. Figure the cost of a home-prepared formula using evaporated milk, water, and corn syrup. Which would be the least expensive? Compare the nutrient contents of the commercial formula to the home-prepared formula. Is there a significant difference in the two kinds of formula?

Invite a pediatrician to speak to the class regarding "Introduction of Solid Foods to Infants." Ask questions such as: When are solid foods begun? Which foods are introduced first? How much will the infant eat at one serving? What techniques will encourage the infant to like a variety of foods? When should infants be weaned? How can parents recognize signs of food allergies?

Interview a child care worker and ask questions about foods served in child care centers for meals and snacks. Who plans the meals and prepares the food? What are the sizes of servings for small children? How are the children encouraged to eat a variety of foods? Summarize guidelines for a day care food service.

Observe a demonstration on how to feed an infant solid food. Does the infant spit the food out? Does the infant seem to enjoy the food? Ask the mother questions about the feeding process and any problems she has.

View Transparency 48, "Food Servings for Young Children." Discuss the sizes of servings for young children. Would you use a regular size dinner plate or a luncheon size plate to serve children's food?

Suggest ways of serving food that would be especially appealing to children at mealtime or snacktime. Examples: use cookie cutters to cut sandwiches into unusual shapes; make faces on pancakes; serve an ice cream cone upside down on a plate with a clown face on the ice cream, etc.

Prepare meals for two groups of young children. For the first group, the food should be plain with no decorations. Sample menu: plain sandwich halves, fruit salad, milk. For the second group, serve a meal which is decorated to appeal to children. Sample menu: pinata sandwiches (cut in animal shapes with a cookie cutter), sombrero salad (lettuce leaf topped with pineapple ring in which one-third of a banana stands with a cherry top surrounded with grated cheese for fringe), and milk served in bright cups. Hang a pinata overhead and use bright paper plates and napkins. Use a sombrero as a centerpiece. Compare the reactions of the children.

Study resources and develop a set of written guidelines that would enable parents to help children develop good eating habits. Try out some of the guidelines when you babysit with young children.

Study the recommended allowances for a child, age 3. Develop a day's menu plan which will provide the necessary nutrition and keep in mind the serving sizes for children. Include nutritious snacks for the day in the plan. Hand in for evaluation.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
3. Adolescence	Study references on the nutrition requirements during the adolescent growth period. Many teens are very active physically and require a lot of calories for energy. What are the recommended allowances for males and females during adolescence? [NOTE TO TEACHER: Also see pages 145-160 in *The New Nutrition*, Teacher's Edition, for additional activities on personalizing nutrition.] Discuss in class the food habits of teens. Do they eat more fast foods than the average adult? Do they tend to eat a lot of snack foods? What effect can food habits such as the above have on achieving a balanced diet with adequate nutrition? How concerned are teens with weight and appearance? Study articles on the nutrition provided by foods from fast-food restaurants. What were the findings? Is the nutrition adequate for energy and development? Report to the class. Was the article you read biased or factual? Make a chart comparing the cost, calories, and nutritive value of foods that may be bought in fast-food restaurants. Share your chart with the class. Discuss. Brainstorm to list ways to exercise the body. Which exercises could last a lifetime? What special diet changes would be needed for each exercise method? Outline characteristics of an exercise program that could last a lifetime. Select a sport or exercise program and research the disadvantages and advantages of the exercise according to the goals outlined in class. Share your findings with the class. Listen to a physician describe the value of exercise and nutritional requirements of persons engaging in different types of exercise. Are any changes in eating habits usually required? Are extra calories needed? Discuss the nutritional needs of athletes. Define the terms *carbohydrate loading, protein loading, protein supplements, pre-game meal,* and *dehydration.* Discuss how each term is related to the athlete. What misconceptions are often believed about these terms? Write to the American Alliance of Health, Physical Education and Recreation and ask for information regarding diets for athletes. Discuss the recommendations. Do they agree with diets followed by athletes in your school's sports program? Design posters describing safe and nutritious diets for athletes.

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

Survey coaches and athletes for pointers on diets for athletes. What foods are recommended? Which foods should be avoided? What kinds of liquids are consumed during games? Are salt tablets given to players? What foods are eaten during the pre-game meal? When is the pre-game meal eaten? Assess your findings based on your knowledge and research on good nutrition for athletes.

Look for articles in newspapers and magazines regarding diets for athletes in training. Analyze the articles. Are the diets based on sound nutritional principles? What myths can you identify? What differences would occur in diets for professional athletes? For mature athletes? Discuss the articles in class.

Assume you are a coach of a favorite sporting event. Determine how many calories the sport would expend for a 150 pound athlete. Outline a meal plan for the athlete. How many total calories per day should be consumed? From which food groups should extra calories be obtained? What specifications would you recommend for the pre-game meal?

Discuss the importance of self-image to teens and the relationship of food and nutrition to that image. What image is desired by many males? What image do many females desire? Is this changing? If so, how?

Study references to determine the latest facts and findings regarding acne. Do certain foods need to be avoided by teens to control skin problems? If so, which foods may cause problems?

Define the medical term *anorexia nervosa*. Discuss the information obtained in class. Describe common characteristics of people having this disorder. How does it begin? Is the problem psychological or physical or both?

Listen to a tape recording of a person suffering from anorexia nervosa, or find articles in newspapers or magazines concerning cases of anorexia nervosa.

Invite a physician, nurse, or public health official to class to discuss anorexia nervosa. Ask questions such as: What symptoms accompany the disorder in the beginning? What dangers are involved? How common is the illness? What other disorders are commonly associated with anorexia nervosa? What are the chances for recovery? How long does recovery take? Should dieting be under supervision?

Plan a day's menus for an 18-year-old boy and a 14-year-old girl which will provide an adequate number of calories

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	and adequate nutrition. Use information from the recommended daily allowances and Nutritive Values of Food chart. Hand in the menus for evaluation.
4. Aged	Study resources on nutritional needs of the elderly. Explain the importance of planning nutrient-dense meals for the elderly because of decreasing needs for energy while nutrient levels remain the same as for other adults.
	Visit a local nursing home or retirement home and interview the person in charge of food service. What special needs are considered in preparing meals for the elderly. Who does the menu planning? Are fried foods served? Are spicy foods served? Report your findings to the class.
	Determine what local services are available to assist senior citizens with meals. What federal programs can provide aid to citizens who are on fixed and limited incomes? Who administers these programs in your area? Do they need volunteers to assist with the programs? Could FHA/HERO be involved in this kind of program by making tray favors, etc.
	Invite the county extension agent to visit your class and bring samples of materials the extension service has available on nutrition, meal planning, etc., for the elderly.
	Describe special considerations of dietary planning for the elderly. Examples: few calories, more frequent meals, soft foods for those with dental problems, and mildly seasoned foods for those with digestive problems. What are some psychological reasons for loss of appetite and not eating in the elderly? (Example: loss of independence, loss of spouse, depression, etc.) What can be done to prevent this? What can be done to help an elderly person regain appetite?
	Prepare a low cost menu which meets the dietary needs of an elderly person and can be prepared with a minimum amount of physical energy. Suggest adaptations which would make the menu suitable for a person with dental problems, a person with digestive problems, and a person who is overweight.
5. Illness	Discuss in class illnesses that require special diets to aid in control or recovery. Examples: diabetes, heart disease, food allergies, or ulcers. Have you had any personal experience with any illness that required special diets? What kinds of foods were restricted or eliminated?

Read articles related to coronary heart disease and or strokes. What type diets are recommended? Why are fats and sodium often restricted?

Contact your local hospital to see who instructs patients requiring special diets. Interview the instructor or dietitian or invite them to speak to your class regarding special diets.

Call or write the American Heart Association and ask for information on special diets for heart patients or stroke victims. Study the information received and give a brief report to the class. What other services does the American Heart Association provide?

Visit the public library and determine what kinds of books are available to assist people requiring special diets. Are cookbooks for diabetes and heart disease patients available? Check out several special diet books for the class to review and evaluate. Would the books be helpful to persons planning menus for the special diets? Can you think of other information which would be helpful?

Study information on diabetes and related diets. What are food exchanges? What forms of insulin are taken by diabetic patients? What are some of the dangers if diabetic patients do not follow their diets? What connection is there between obesity and diabetes?

Choose as a topic a medical condition requiring a special diet. Locate and study reliable information regarding the special dietary requirements. Report to the class. Topic examples: migraine headaches, allergies, ulcers, diverticulosis, etc.

Plan and prepare an exhibit using food models to show meal variations for individuals with special needs: elderly, young child, pregnant woman, person with hypertension or heart disease, etc. Show how meals can be modified to meet special needs of individual family members. Verify the nutritional adequacy of the meals proposed. [NOTE TO TEACHER: The exhibit might be used during a school open house or placed at a local library or hospital. See Supplement at end of Semester Course for details.]

COMPETENCIES:

Ability to plan nutrious meals and snacks

Ability to manage family meals

Ability to serve foods attractively

SUB-COMPETENCIES:

Analyze factors influencing meal planning for individuals and families.

Develop menus for family meals.

Manage time, energy, and equipment when preparing family meals.

Serve family meals attractively.

Utilize appropriate table courtesy.

Evaluate the quality of foods prepared.

CONCEPTS

II. Meal Management
  A. Planning Meals for Individuals and Families
    1. Meal patterns

LEARNING AND EVALUATION EXPERIENCES

Study resources for information on meal patterns in the United States. Do you think meal patterns have changed in the past few years? Why? What kinds of changes are being predicted for the future? Example: projections are that in this decade 50 percent of all meals will be eaten in restaurants or away from home.

Survey your class to determine how many families follow the traditional "three meals a day" meal pattern. How many different kinds of meal patterns can be identified within the class? Are some meals more snacks than actual meals? Do meal patterns vary on weekends? Do patterns vary between cultures? How does one's family influence meal patterns?

Discuss the importance of family meals based on the following statements: often in our modern, busy society, mealtime may be the only time the entire family is together; if family members are eating on their own about twice a day, then everyone would need some knowledge of nutrition in order to select foods to meet the daily requirements for good nutrition.

Review your three-day dietary intake record. Did you eat most of the food at home or away from home? Did you make the choice of what food to eat or did someone else select the food for you? If your diet was not adequate, make some written guidelines for improving your selections. What factors influence your family's meal patterns?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Using the Daily Food Guide	Using the Daily Food Guide, write out a day's menu, including snacks, of foods that you enjoy. Does the menu include the correct number of servings from each group? Would it provide the calories you need? Is the guide easier to use than the RDA chart? Why? Plan two nutritious breakfast menus. One should use traditional breakfast foods and the other should include non-traditional breakfast foods. Which breakfast would you prefer to eat? Why? Does each breakfast include approximately one-fourth to one-third of the day's servings from the Daily Food Guide?
3. Individual calorie needs	Brainstorm in small groups for ways to meet the variety of calorie needs in families without having to prepare separate meals for each individual. Suggest ways to incorporate more calories and ways to reduce calories based on one menu for one meal. Recommend nutritious snacks that can assist in adjusting calories. Share the group's best ideas with the class. [NOTE TO TEACHER: Provide each group with a menu for one meal.] Select a case situation from several presented by your teacher. Project the calories needed by each individual in the situation based on the information given. [NOTE TO TEACHER: Case situations should include information on number of individuals in family, age, sex, activity levels, overweight or underweight conditions of family members, etc. Cases might include one- and two-parent families with children of various ages, families with elderly relative included, etc.] Discuss in class the case situation and the calorie requirements determined by your investigation. Do your estimates meet the approval of the class? Be able to justify your calorie recommendations by citing charts or other information sources used. Work in pairs to weigh and measure following demonstration by teacher. Conduct the pinch test as demonstrated by teacher. Determine your activity level and recommended weight. Determine the number of calories needed to reach or maintain ideal weight. [NOTE TO TEACHER: See Supplement at end of Semester Course for details. Also see Transparency 17 for height and weight tables.]
4. Balancing nutrient content	Study references on planning balanced diets. What portion of protein is to be included in each meal when three meals per day are to be eaten? How often should liver be served? How often should deep green or deep yellow vegetables be served? Could you achieve a balanced nutrition with just two meals per day?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Examine a day's menu plan for nutritional balance. [NOTE TO TEACHER: The menu should include breakfast, lunch, snack, dinner, and snack.] What proportion of the day's nutrients should be included in the three meals? In the two snacks? Debate the topic "Snacks should be Part of One's Daily Nutrition." Do you think most people keep tract of the snack foods they eat and consider them as part of the recommended allowances? If not, why? Are snack foods typically high in calories or low in calories?
5. Balancing color, texture, shape, flavor, and temperature of foods	Discuss in class how color in food can make a meal more appealing. Have you observed people in cafeterias select foods that are all one color, such as white? Example: baked fish, mashed potatoes, cauliflower salad. What foods would you change to make the color of the above meal more appealing? Look at several different kinds of dishes in the laboratory and predict how certain colors of food would look placed on these dishes. Project how color of placemats or napkins would affect the total place setting and the attractiveness of the food. Participate in an "Identification by Texture" contest. Participants should be blindfolded then given small bits of a variety of foods to see how many they can identify by the texture. [NOTE TO TEACHER: Provide celery, raw turnips, carrots, boiled potatoes, cottage cheese, whipped topping, tapioca (cooked), and any other foods which would be good examples of crisp, crunchy, hard, soft, and tender textures.] The student identifying the most foods might be given some small token or award. Analyze the texture of foods in the following two menus. Menu 1: baked fish, broiled tomato, mashed potatoes, and lime gelatin salad. Menu 2: baked ham, scalloped potatoes, green beans, and carrot and raisin salad. Which menu has the better variety of textures? Explain how too many foods of the same texture can lower the appeal of the meal. Study pictures of food and identify the variety of shapes represented. Show how vegetables can be prepared in a variety of shapes. Example: carrots can be cut in long strips, grated, diced, cut in round slices, or cut in oblong slices. Identify other foods that lend themselves to a variety of shapes through different preparation techniques. Explain how use of a variety of shapes can enhance the appearance of food on the plate. Use the pictures to develop a bulletin board.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Discuss in class how to plan for variety of flavors in meals. As a general rule, do not serve more than one strong flavored food at a meal. Name all the strong flavored foods that you can. Suggest foods that would be appropriate complements to hot, spicy dishes. Analyze menus found in magazines or recipe books. Does there appear to be a variety in temperatures? Is at least one cold food included with hot meals and at least one hot food included with cold meals?
6. Developing menus	List factors to be considered when planning menus. Include items such as the skill of the cook, amount of time available for preparation, space, equipment and utensils necessary, the individuals being planned for, food groups, and aesthetic appeal. Which items would have the most influence on your menu planning? View and discuss Transparencies 49 and 50, "Guide for Meal Planning" and "Menu Planning Sheet." Using these transparencies as guides, plan a week's menus for your family. Write a paragraph describing how many people are in your family. Include information on age, sex, and activity levels of family members. Hand in the paragraph with the menus you have planned for teacher evaluation. [NOTE TO TEACHER: Also see pages 175-184 in *The New Nutrition*, Teacher's Edition, for additional activities on meal planning.] Plan a simple family menu considering nutritional needs, cost, time, energy, and family acceptability. Sample menu: frozen chicken sticks, frozen peas, instant rice, sliced bread, margarine, water. What contributions can convenience foods make to menu planning? [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]
7. Cooking for one or two	Interview persons you know who live alone or with a roommate. How do they manage meals for one or two? Who does the planning? Who does the shopping? Who does the cooking? Who does the cleanup? What adjustments do they make in recipes that are intended to yield four to six servings? Do they ever cook ahead by preparing more servings than needed for one meal and freezing the extra? Share your findings in class. Look in magazines and cookbooks for tips on meal planning and management for one or two people. Report your findings to the class. Compile a class list of the best suggestions.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Develop a list of nutritious foods that can be kept on hand for quick meals or snacks when there is no time to cook. Include items such as dried fruits, boiled eggs, fresh vegetables, cheese, peanut butter, yogurt, etc.
	Discuss in class the importance of setting the table or tray, sitting down to eat, eating without reading or watching TV, and eating slowly, even when eating alone. Discuss the following statement: "Poor eating habits are easily established and hard to change."
8. Planning meals for busy families a. Comparison of conventional, convenience, and fast foods	Plan a market order for a meal of fried chicken, mashed potatoes, and coleslaw for two. Estimate the cost of preparing the meal at home by conventional methods. Allow about one-half chicken, two medium potatoes, and about one-half pound of cabbage in figuring the cost. Project how much time it would take to prepare the meal. Compare the amount of time and the cost involved for the conventional meal with a similar meal purchased at a fast-food restaurant and with a frozen "convenience" meal. Which meal would be more satisfying and tasty? Which meal would be cheapest? Which would be most expensive? Which one would take the least time?
	Locate a chart that gives the calorie content for some major fast-food products. Compare the calories in the fast-food items to the calorie content for the same food items prepared conventionally. Use a Nutritive Values of Food chart to find the calorie content for various food items. Discuss other aspects of food prepared in fast-food restaurants such as salt content and fiber content.
	Work in groups to prepare French fries and lemonade in one of the following forms: fresh, frozen, and convenience. Compare the nutritional values, caloric content, cost, preparation time, and palatability of the different forms. [NOTE TO TEACHER: See Supplement at end of Semester Course for details. Also see pages 185-199 in *The New Nutrition*, Teacher's Edition, for additional activities on nutritious snacking.]
b. Quick meals	Look in recipe books and locate recipes for foods that can be prepared in thirty minutes or less. Plan five meals that can be ready in thirty minutes. Be sure to evaluate the meals for nutrition, aesthetic qualities, likes and dislikes of family members, etc. Prepare at least one of the meals for your family. Did it take thirty minutes or less to prepare? If it required more time, analyze the reasons and report to the class. Select one of the meals to prepare in foods lab.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Interview homemakers to learn which convenience foods they use and why. Share your findings with the class. Estimate the value of convenience foods to the homemaker who has a full-time job.
	Work in pairs to figure the costs per serving of a specific convenience food and its home prepared counterpart. Examples: fresh squeezed orange juice versus frozen orange juice concentrate and homemade cake versus cake mix or purchased cake from a bakery. In which instances was the convenience food less expensive? More expensive? Are convenience foods always faster? Are homemade ones always cheaper?
	Brainstorm to point out situations when convenience foods would be appropriate and situations when home prepared foods would be appropriate. Discuss each situation.
	Find recipes for "do-it-yourself" convenience foods such as a master baking mix, a cornbread mix, hot chocolate mix, spiced tea mix, and a seasoned coating mix to be used when baking meats, poultry, or fish. Check the cost of ingredients for making the home prepared mix as opposed to the cost of purchased mix. Be certain to consider the amount or yield of the recipe when comparing costs. Estimate the amount of time and/or money that could be saved by having mixes on hand when preparing family meals.
	Plan a meal which can be prepared in 25 minutes. Sample menu: microwave beans with weiners, frozen greens, brown and serve rolls, ice cream sundaes, water. Rate the acceptability of the meal. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]
B. Managing Meal Preparation 1. Time management	Study resources to determine ways to manage time while preparing meals. How would you manage to have everything ready at the same time? Find an example of a time schedule and study it.
	Plan a time schedule for a given menu. [NOTE TO TEACHER: This could be a group or an individual activity. Menus should be for 30 minute meals. Students may work with the same or different menus.] Discuss the schedule you prepared. Is it workable? Would all the tasks be accomplished in the time you allowed? Would the food items be ready at the same time?
	Plan a time schedule for each foods laboratory experience and meal prepared at home during the semester. Following the lab, evaluate the effectiveness of the time

schedule. Did you forget to include any tasks? Did you allow sufficient time for each task? Was the meal ready on time? What changes would you make next time?

Discuss the term "dovetailing." Analyze the time schedule you prepared to see if tasks were dovetailed as much as possible. Revise the time schedule, if necessary, to incorporate as much dovetailing as possible.

Plan ways to dovetail tasks when preparing meals in the foods lab or at home. Were you able to complete the tasks without problems? If not, what would you do different next time? What aids did you use to help you time critical tasks? Examples: timer, visual checks.

View Transparency 3, "Food Preparation Schedule." Determine how the tasks could be divided so that two persons could work together to prepare the meal. Divide the tasks so that the two cooks do not need the same equipment or space at the same time. Then divide the tasks again to accommodate your lab group. Does everyone have an adequate assignment? If more than one task is to be performed by each person, allow time to complete one before scheduling the next, or plan appropriate dovetailing.

Interview three persons who prepare meals to find out what "favorite" short cuts they use in preparing meals for families. Examples might include using a tray to set the table, chopping more than one vegetable at a time, cooking potatoes in the skins in a pressure pan, and cleaning up as you go. Share the shortcuts with the class.

2. Energy and efficiency of family members

Discuss factors which may affect the energy and efficiency of a person(s) preparing food. Factors may include: job hours, children, illness, handicaps of various types, number of persons involved in food preparation, etc.

Study references to find examples of physical factors which influence energy and efficiency. Examples: good posture, working at tables or counters that are the correct height, alternating jobs that can be done sitting and standing, using a chair or stool, etc.

Collect pictures from magazines illustrating the effect of proper kitchen storage and organization on energy required to prepare meals. Example: having everything within arm's reach in the storage-preparation center saves trips across the room. Give examples of energy saving methods in the cleanup center and in the cooking-serving center.

Observe a person preparing a *family* meal. Record the number of trips made across the kitchen from one appliance or kitchen center to another. Also record the menu and the time needed to complete the meal, including cleanup. Suggest ways to reduce either the time or effort expended in preparing this meal.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
3. Equipment management	Study catalogs, brochures, equipment in the foods lab, and equipment at home to determine the variety of kitchen equipment and small appliances available. Some equipment can be used for more than one operation or task. Make a list of the equipment you think would be essential for a beginning kitchen. Note the prices so that a total cost can be computed. Discuss the lists in class and determine the cost for setting up a kitchen with essential equipment.
	Discuss storage arrangements for small kitchen equipment and appliances. Where would you store a heavy duty mixer? A hand-mixer? Would frequency of use determine where an item is stored? What other considerations would help determine the storage space or area? Where should detachable cords be stored?
	Read information booklets on small electrical equipment. What kind of special care is required? Can the item be washed in the dishwasher? Can it be immersed in water?
4. Energy conservation	Find articles in current periodicals related to saving energy in the kitchen, or obtain materials from utility companies or your county extension office. Make notes on the ideas you could apply to your family's kitchen.
	Experiment with recipes that require a preheated oven by not turning the oven on until the food is placed inside. The length of cooking time may need to be increased by 3-7 minutes, but this increase is often less than the amount of time needed to preheat the oven. Did the product turn out the same as usual? Did you encounter any problems? If so, what?
	Discuss types of equipment that can be used which save energy or keep from adding heat to the room when air conditioning is in use. Examples: using a pressure pan reduces cooking time; using an electric skillet saves heating up the entire oven; microwave ovens reduce cooking time for many foods and produce very little heat, etc.
	Check the hot water heater in your home to determine if the setting is above 120°. Many water heaters are set too high. Energy can be saved by not keeping the water supply so hot that cold water must be mixed with it to cool it down.
	Develop menus that can utilize oven heat to best advantage. If one food must be cooked in the oven, plan another food that can also be cooked at the same temperature and at the same time.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Suggest ways to save energy resources. Example: when using electric range tops, turn the unit off before the food is completely done; the element is usually hot enough to finish the cooking or keep the food warm until served.
	Look for ways to save energy when planning and preparing meals at home. Examples: plan a no-cook meal to eliminate adding heat to the house during warm weather; plan a one-dish meal; prepare several items in the oven at once; double a recipe and freeze a portion for later use; save electricity by turning the dishwasher off after the rinse cycle; save water by washing vegetables in a pan rather than under running water; plan ahead to reduce the number of times the refrigerator must be opened. Report to class on five ways you save energy in the kitchen.
C. Serving Meals 1. Table settings	Study references to determine methods of setting the table. Practice setting the tables in the food laboratory using the different methods. Which method is the most familiar? Which method is the most formal? Which is the most informal?
	Discuss the value of attractive table settings. Does an attractive setting require the use of china, crystal, and silver? Suggest ways of using inexpensive appointments to create attractive table settings.
	Conduct a class competition to construct simple, attractive centerpieces from grab bag items. Give two small awards for the most attractive and most creative use of materials. [NOTE TO TEACHER: Grab bags may be assembled from items in the department such as holiday decorations, display case items, old bulletin board materials, scraps of fabric, etc. A time limit should be given if done in class or students could work outside of class on the project. The centerpieces could be donated to a nursing home.]
	Volunteer to set the table for your family's evening meal for three days. Experiment with different table settings. Record the reactions of family members and report to the class.
2. Table service	Study resources to become familiar with the different styles of meal service. Be able to define or describe the characteristics of plate service, country or family style service, modified English style service, compromise service, buffet service, and Continental or Russian style service.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Select one style of meal service for each lab group to analyze. Using glassware, flatware, and dinnerware available in the department, arrange a table for the style of meal service selected and demonstrate (without food) the style of service for the class. Have one of the group act as spokesperson and explain the style of service as the "meal" progresses. [NOTE TO TEACHER: This activity could easily be evaluated, if desired.] Discuss the various styles of meal service in class. Which ones are the most familiar? Which ones are used very seldom? Why do you think styles of meal service have become less formal in the United States? Set up a buffet table for the next entertainment event sponsored by your FHA/HERO chapter or the home economics department. Observe the effectiveness of the arrangement during serving. Make suggestions for improvements in the arrangements for the next event.
3. Table courtesy	Write down the most embarrassing moment you have experienced during mealtime. What caused the embarrassment? Could you prevent the same situation from occurring again? How? Discuss in class some common table courtesies which are considered important for everyone to follow. Examples: elbows at sides, not on the table; sitting up straight; passing food to others before serving yourself; talking about pleasant topics, etc. Participate in short role plays or read descriptions of eating practices. Two or three students might illustrate eating soup, for instance. One should use the correct method and the others incorrect methods. The class identifies the method which is correct. Discuss each topic as it is covered. [NOTE TO TEACHER: Many other eating practices lend themselves to this type of exercise but students may need some help with suggestions.] Observe people eating in the school cafeteria or in other public eating places. What good or correct eating practices did you see? What examples of incorrect eating practices did you see? Are you more aware of eating practices than before studying this topic? Write a brief summary of your observations and report to class.
4. Quality of food	Discuss aspects that influence the quality of food. What makes a meal appealing to you? Which of the following would you rate the highest in triggering your personal appetite: eye appeal, aroma, temperature, texture, or atmosphere of the setting. What are the reasons for your choice?

Look for information in an encylopedia on the sense of taste. Does alcohol consumption and use of tobacco affect the taste buds? Which age group has the most acute sense of taste? What are the four basic flavors? How can taste information assist in planning meals that appeal to the sense of taste?

Develop guidelines to ensure serving food at the proper temperature. Consider situations which might require holding food before serving it.

Discuss the arrangement of food for serving and the use of garnishes to enhance the quality of a meal. If possible, visit a restaurant that has a buffet meal set up to view the display techniques used to enhance the selections. Or invite a chef or caterer to visit the class to give tips on enhancing the eye appeal of meals.

COMPETENCY: *Apply consumer skills to food buying*

SUB-COMPETENCIES: *Develop a food budget.*

Recognize the influence of advertising and marketing on food choices.

Utilize appropriate shopping techniques.

Utilize label information in making buying decisions.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
III. Food Buying A. Consumer Skills 1. The food budget	Brainstorm to list factors that affect the food budget. Examples: geographic area of residence, number in family, ages and activities of family members, home food production, food storage facilities, income level, food preferences of family members, and the increase of women working outside the home. Describe how any of these various factors would affect the food budget. Discuss foods that might be included in planning menus for a family with a very limited income, a moderate income, and a high income. Compile a list of the foods appropriate to each income level and compute the cost of each list by using newspapers with grocery prices. What difference in cost did you find in the list for the three different income levels? Can good nutrition be achieved on a low income? Can poor nutrition occur among the wealthy? What factor could influence both groups? Develop daily menus varying in cost level. Determine the nutritional adequacy and the aesthetic quality of the menus. Assume that the menus you develop will be used by a family of four, two adults and two children. Compute the cost per person for one day's menus at each cost level. Locate an article in a current newspaper or magazine detailing how a particular family budgets their food money. Give a brief report to the class on the article. Discuss the reports in light of the information you have learned on meal planning and nutrition. Do you think the meals of the family meet their nutritional requirements?
2. Influence of advertising and marketing on food choices	Work in groups to identify factors that make food advertisements useful. Examples: information about the product; appeal of the product; factual, price information, etc.

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

View food advertisements in magazines and newspapers or describe ones you have seen on TV or heard on radio. Discuss ways advertisements are designed to appeal to the consumer. Examples: through use of color and eye appeal, through samples to taste, through auditory effects, etc.

Conduct a survey of supermarket managers and homemakers to determine the effect of advertising on food buying practices. Use prepared questions such as: "How does advertising affect food sales in your store?" "Do you use food advertisements to determine your purchases?"

Bring to class examples of food advertisements found in newspapers and magazines. Examine the advertisements and determine if any of them contain misleading information.

Describe examples of advertising which you consider deceptive. Examples: 1) "ABC Instant Drink made with chilled milk is not only delicious, but nourishing. It is rich in calcium, protein, and vitamins that children should have." The advertisement is misleading because the product is not nourishing unless milk is used. Milk, not the product, is nourishing. 2) Stores list a special price of three for $1 when the regular price is 33¢. 3) Cereal may imply that children become athletes after eating the cereal when the cereal has no actual relationship to athletic ability. 4) Some potato chip packages imply that the product is highly nutritious.

Locate an article on the marketing techniques used by supermarkets to increase sales of specific items. Examples: items placed on the center shelf move faster than those on the bottom shelf; one item may be located in several places in the store, etc. On your next visit to a supermarket, see how many of these marketing techniques you can identify being used. Report to the class.

Define *unit pricing*. How can unit pricing aid the food shopper in determining which product is the best buy? What are *computerized shelf labels?* How can they aid in making price comparisons? How can the shopper determine the best buy when these aids are not available?

Visit food stores in your area. Which ones provide aids for making price comparisons? Are the aids kept up-to-date? Compare the prices of different brands of several products such as green beans, cornflakes, flour, or dishwashing liquid using the aids provided. Make the same comparisons by hand. What problems did you encounter? Report to class.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
B. Shopping Trends and Techniques	Study resources to find information on shopping trends such as using coupons, cooperatives, bartering, generic foods, etc. Bring articles to class and share with classmates.
	Interview shoppers to determine how many use coupons or select a store because of stamps or other promotional gimmicks. Identify some promotions currently being used by stores in your area. Do shoppers feel that these promotions add to the cost of food?
	Brainstorm to identify shopping techniques that can make shopping easier and more efficient. Examples: shop with a list; shop only once a week or less; shop without children, if possible; shop after a good meal, not when hungry, etc.
	In class, examine generic foods, store brand foods, and some national brand foods in categories such as cereal products, canned goods, or cake mixes. What is the difference in price between the three types of foods? What is the difference in packaging? Open the food to examine and compare the contents. Prepare three different brands of mixes (Example: brownies) and have students sample each. Taste the various products. What differences are evident?
	Check your kitchen and find a product that offers a refund for proof-of-purchase. Send in the required "cents-off" coupon labels or other required information. Keep a record of the date you requested the refund and when you received it. How long did it take? How much did you really save? Was it worth the time, effort, and cost? Will you look for more refund opportunities in the future?
C. Label Information	Study references to determine what information is required by law on food labels. What information is included at the manufacturers' option?
	View Transparency 5, "Food Labels." Identify and explain all the indicated parts of the label. [NOTE TO TEACHER: Parts to be identified include price, product name, product illustration, Universal Product Code, manufacturer's name and address, net weight, nutrition label, ingredients.]
	Study the list of ingredients on a food product label. Note that the ingredients are listed by weight in descending order. Example: "Water, sugar, flavoring" indicates that the product is chiefly water and that the amount of sugar is greater than the amount of flavoring. Why would this information be valuable to a consumer?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Explain the meaning of the phrase "standards of identity." Identify some foods which have a standard of identity. What are the reasons that ingredients do not have to be listed on these food items? Look up the nutritive value of different grades of meats and eggs. Does the grade affect the nutritive value? What would this mean in terms of planning family meals on a limited budget?

COMPETENCY: *Utilize basic skills in kitchen planning and management*

SUB-COMPETENCIES: *Utilize appropriate kitchen equipment for food preparation tasks.*

Use safe and sanitary procedures for food preparation.

Use recipes effectively in food preparation.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
IV. Basic Kitchen Skills A. Kitchen Equipment 1. Utensils	Take a "Kitchen Utensil Identification Pretest." Study resources to find the identification and use of the items you missed on the pretest. [NOTE TO TEACHER: All basic utensils including cookware could be placed on a counter with a number beside each. Be certain to prepare an answer key before the test. Return the tests with missed items marked so that students can look up the correct information.]
	Discuss inexpensive adaptations of food preparation utensils that could be made to accommodate persons with various kinds of handicaps. Examples: cut a hole in a pull-out drawer or breadboard so that a mixing bowl can be inserted for steady mixing; tape handles to improve grip; drive nails through a cutting board from the bottom to hold items steady for cutting.
	Listen to a guest speaker, visit a department store, or study references to obtain information about cookware. Practice identifying the different kinds of materials used for cookware by using the laboratory cookware. Look for features which indicate quality such as ease of care features, fit of lids, method by which handles are attached, etc.
	Examine a display of different kinds of cutlery. Compare the construction of knives on display with Transparency 26. Which knives appear to be well constructed? Identify appropriate uses for the various knives. How should knives be sharpened?
	Invite a recent bride or groom to share a list of the minimum number of utensils she or he feels are needed to set up a first kitchen. Compare the list to similar lists found in textbooks or recipe books. Develop a class list. Determine the cost of the items on the list made by the class.
	Take a posttest on "Kitchen Utensil Identification." Compare your score on the posttest to your pretest score. Did you show improvement?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Small equipment	Watch a filmstrip on small kitchen equipment. Identify as many items of small kitchen equipment as possible. Compile a list in class. Is the list long? Would every kitchen need all this equipment? How much storage space would be needed for all the items on the list? Classify each item into the following categories: necessary, useful, unnecessary. How many items did you place in the unnecessary category? Compare your categorized lists to those developed by classmates.
	Discuss in class ways to determine which pieces of small equipment would be most useful. Prepare a check list of questions that could be used to assist in making decisions regarding the selection of equipment. Examples: Can the item be used for more than one purpose? Will it be used frequently? Can an existing piece of equipment do the same job? Is there room to store this equipment? Will it be easy to clean?
	Examine the small equipment available in the foods laboratory. Select one piece of equipment to demonstrate for the class. Study the use and care manual, textbooks, or other references to prepare your demonstration. Identify repairs which might be made at home. Be able to answer questions regarding the use and care of the equipment.
	Assume that you are going to purchase a piece of small kitchen equipment. How will you decide which kind to buy? Look for information in current consumer magazines. Obtain current price information from local stores. Evaluate the choices and make a "selection" which suits your needs. Report to the class on how and why you selected the particular piece of equipment. [NOTE TO TEACHER: Have each student in the class report on a different piece of small equipment.]
3. Large equipment	Observe a utility company home economist demonstrate the proper use and care of large equipment in the foods laboratory including a gas and an electric range, refrigerator, dishwasher, freezer, etc. What safety precautions should be taken in the use and care of large kitchen equipment?
	Study use and care information on equipment not available in the laboratory. Practice some of the care techniques on equipment available in your home kitchen. Was the information you read helpful in the efficient care of the appliance? Report to the class on the care techniques you used and how much time was required for the operation.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Divide into three groups to determine and define the responsibilities of the manufacturer, the retailer, and the consumer for service and repair of major kitchen equipment. Report to the class on the findings of your group.
	Explain procedures for correcting equipment failures. Examples: check the power source first; consult the instruction book for information on simple problems; consult a repairperson for instructions or service; contact the retailer about guarantees and warranties.
	Brainstorm to list factors influencing the amount spent for major kitchen appliances. Examples: convenience features; materials used for construction; fuel (energy source and energy-saving features); family needs, wants, and resources; and time of year purchase is made. Discuss the factors influencing cost in class.
	Develop a price range chart for major kitchen equipment. Check current prices with retailers or in catalogs. Find information on life expectancy for each major appliance. Include this information on the chart. Determine the difference in cost between "top-of-the-line" and economy models of appliances.
2. Planning work areas	Read selected references and make a list of factors to consider when planning a work area. Include organization, arrangement, equipment, and storage factors in the list. Share your list with classmates. Compile individual lists for a general list of factors to consider when planning work areas.
	Read selected references to identify efficient arrangements for work centers in kitchens. Define *work triangle*. Name the three major pieces of equipment which make up the work triangle. Why is the work triangle an efficient arrangement for the work centers in the kitchen? Why is it recommended that the three sides of the work triangle measure no more than 22 feet?
	View Transparency 51 and discuss the basic kitchen shapes, the work triangles illustrated in each, and the arrangement of equipment. Name the basic kitchen shapes. Which kitchen shape is usually considered the most efficient arrangement? Why?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	View Transparency 52 to gain a better understanding of planning the storage space in the kitchen work areas. Discuss why everyday items should be stored close at hand, preferably in the area between waist and eye level. What should be stored in the dead storage height above your head and in deep corners? Where would you store items such as holiday pans and dishes, fondue pots, large roasters, and canning equipment. Discuss storage factors to consider when planning a kitchen for a person in a wheelchair or a person walking with crutches or a cane. [NOTE TO TEACHER: Storage space to meet special needs can be provided by building a shelf above the sink. Narrow shelves, pegboard, and magnetic racks can store items used at the sink. Roll-out drawers and pull-out boards under the counters and door-back racks will keep items within easy reach. Cabinet doors which operate by light finger touch are preferable for the physically limited.]
B. Safety and Sanitation 1. Food safety	Define *food-borne illnesses.* Study references to find examples of illnesses in the categories of food infections and food poisoning. Which category of food illness is caused by bacteria? Which category is produced by a toxin?
	Study resources on proper food storage temperatures. How long can prepared food be safely left at room temperature? What is the temperature danger zone for bacterial growth? View Transparency 40, "Temperature of Food for Control of Bacteria."
	Develop a list of measures which can be utilized during food preparation for controlling or preventing bacterial growth. Remember that bacteria grow best with food, moisture, warm temperatures, darkness, and oxygen.
	View a filmstrip on handling potentially dangerous foods safely to prevent bacterial growth. Identify foods that are high in protein, moisture, and/or carbohydrates and that must be refrigerated immediately after preparation. Examples: potato salad, cream puffs, poultry stuffing or dressing, etc. Discuss instances of food borne illness you have read about which involved some of these kinds of food.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Listen to a guest speaker or view FDA films concerning the government's regulations regarding the sanitation of processed foods. What agencies are involved? Who inspects food processing plants and procedures? Who is responsible if contaminated food is marketed?
	View a filmstrip on precautions that should be followed when using home canned foods. Examples: never taste the food before heating; if the food has an odd odor or appearance, throw it away; low acid foods require pressure canning methods.
2. Food sanitation	Work in groups to list standards for personal cleanliness which should be followed while working in the kitchen. Examples: wash hands thoroughly before handling food; do not touch or comb hair while in the kitchen; do not taste food with fingers or utensils used in food preparation. Share the group's list with the class.
	Prepare agar plates to show the growth of bacteria resulting from lack of personal cleanliness. Let someone cough, sneeze, touch with dirty hands, touch with clean hands, and place a hair on five different agar plates. View the plates each day for three days. Which plate showed the least contamination? Which plate showed the most contamination? [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]
	Discuss in class sanitary methods for washing and handling dishes and utensils. Include information such as: dishwater should be warm, soapy, and clean; use hot water to rinse dishes; air drying is more sanitary than drying with a dish towel; handle only the parts of dishes and utensils that will not be placed in the mouth when used. Decide if the following statement is correct: "Using an automatic dishwasher is more sanitary than doing dishes by hand."
	Discuss aspects other than personal cleanliness that influence sanitation in food handling during preparation. Examples: clean utensils, equipment, floors, work surfaces, and food.
3. Kitchen safety	View a film or filmstrip on kitchen safety. Identify safety practices observed in the film. Brainstorm to identify other safety practices that should be followed.
	Develop a bulletin board illustrating hazards which may be found in kitchens. Check the laboratory kitchens to see if any hazards are present. Make corrections or improvements.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Conduct small group demonstrations of kitchen safety practices for the following topics: use and care of knives, can openers, gas and electric ranges, garbage disposals, small electrical appliances, hot pots and pans; handling spilled substances, grease fires, etc.
	Discuss first aid for kitchen accidents including burns, cuts, and falls. Equip a small first aid kit that can be kept in the kitchen for quick use when necessary.
	Discuss safety precautions that are necessary when small children are in the home. Examples: special latches for lower cabinet doors, safe storage of dangerous cleaning products, turning handles of pots and pans toward the inside of the range top, proper use of electrical cords, and safety covers for outlets, etc.
	Place a list of emergency phone numbers by the phone closest to the kitchen. Include the number for the nearest poison control center, the fire department, etc.
	Make kitchen safety posters for National Safety Week as an FHA/HERO project. Display the posters around school and in business establishments, if possible.
4. Kitchen sanitation	Discuss kitchen sanitation practices. Include practices such as washing hands before handling food or dishes and utensils, keeping surfaces on which food is placed clean (especially cutting boards), sanitary dishwashing practices, pest control, etc.
	Invite a speaker from a restaurant, cafeteria, or public health service to explain the sanitation practices which must be followed in public eating establishments. Can these sanitation practices be applied to the home kitchen? Which ones could not be used in a home?
	View a film or study references to identify sanitation practices used in food processing plants. Discuss the sanitation practices in class.
	Role play situations showing the disregard of sanitation practices in home kitchens. Have observers point out each error and have the players do an "instant replay correction."
	Study references to find out how to sterilize dishes and utensils to prevent the spread of infectious or communicable disease among family members. What temperatures should be used for sterilization? What other factors may be involved?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
C. Using Recipes 1. Terms and abbreviations	Study references and recipe books to identify terms related to the mixing and cooking of food. Find definitions for all the terms with which you are not familiar.
	Develop a word game such as Bingo or Definition Bee which uses terms related to cooking. Exchange games with a classmate and work out the answers. Did any new terms appear? Was the game difficult?
	Select several recipes at random from cookbooks in the foods lab. Compare the formats of the recipes from different cookbooks. Are they similiar? Different? Read the recipes to see if they contain any terms that are unfamiliar. Explain the terms used in a written evaluation.
	Find charts in references and cookbooks which give the common abbreviations used in recipes. Read recipes and be able to write out the correct interpretation for all abbreviated measurements or terms. Is there more than one correct abbreviation for some measurements?
2. Equivalents and substitutions	Study references or other resources to find a list of basic equivalent measures. Discuss in class the advantages of knowing the basic equivalent measures.
	Test your knowledge of basic equivalent measures by filling in the following blanks: 10 T. + 2 t. = ______, 16 T. = ______, 3 t. = ______, and 3 T. + 3 t. = ______.
	Find a recipe which serves four persons. Rewrite the recipe increasing the ingredients to make six servings and use equivalents to enable measuring the most efficient way possible. Then double the ingredients in the original recipe. [NOTE TO TEACHER: This activity could be used as an evaluation technique, if desired.]
	Examine several recipe books or reference books and texts to find examples of charts which give information on substitutions that can be used successfully in recipes. Are some charts more extensive than others? Which items appear in all the charts?
	Interview a homemaker to determine which substitutions are most often used. Report to the class and compile a list as the reports are given. Which items are repeated most often?
	Review your knowledge of common substitutions by identifying a substitute ingredient for which each of the following: 3 T. cocoa + 1 T. margarine; 1 T. vinegar or lemon juice + sweet milk to fill 1 cup; 1 T. cornstarch,

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	tapioca, or arrowroot; 2 egg yolks; 5 T. nonfat dry milk in 1 cup water; 1 cup less 2 T. all-purpose flour; ¾ c. sugar + ¼ c. liquid; ½ c. evaporated milk + ½ c. water; ½ t. cream of tartar + ¼ t. bakingsoda. [NOTE TO TEACHER: This could be used for evaluation, if desired.]
	Prepare an exhibit of foods containing the major nutrients which can be substituted for one another in menus when some foods are unobtainable or out-of-season. Examples: grapefruit juice for orange, buttered rice for mashed potatoes, coleslaw for lettuce salad, lite cheese for milk. Provide labels showing nutrient similarities and differences. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]
3. Measuring techniques	Discuss measuring techniques and equipment. Why is accurate measurement important in food preparation? Look at the different types of measuring equipment available in the laboratory. What is available other than measuring spoons and cups?
	Study resources to find definitions for the following terms: *level, level-off, pack firmly, liquid measuring cups,* and *sift.*
	Watch a demonstration of techniques for measuring brown sugar, shortening, various dry ingredients, and liquids.
	Participate in a measuring laboratory. Did you have trouble with any particular technique? Can you identify any technique that you may need to practice further?
	Demonstrate for the class an experiment in measuring flour. First, measure one cup of flour without sifting. Sift another cup of flour and re-measure it. Did you have some left over? How much? Project how this difference could affect a recipe if the flour should have been sifted before measuring.
	Discuss how you would measure one-half of an egg. Many recipes call for one egg and in order to cut the recipe in half, it is necessary to measure one-half an egg. What procedures should be used to measure one-half egg? Would the recipe be adversely affected if the whole egg was used?
4. Preparation terms and techniques	Study preparation terms and techniques in references. Be able to identify terms such as: *whip, fold, beat, cream, stir, blanch, stew, roast, steam, broil, bake, fry, saute, simmer, boil, marinate, chop, dice, mince, grate, slice, sliver, bread, brush, coat, dot, drain, dredge, flute, skim, strain,* and *scrub.*

CONCEPTS **LEARNING AND EVALUATION EXPERIENCES**

Develop a "scrambled word" game, crossword puzzle, or word search game to help you and your classmates learn preparation terms and techniques. Play the games in class and discuss the answers. Which game was the most difficult to play? Which one helped you learn some new terms?

Participate in small group demonstrations of various food preparation techniques such as: folding in ingredients, creaming shortening and sugar, sauteing vegetables, dicing, mincing, chopping ingredients, etc. Select a topic to demonstrate. Study information on the method or technique in several resources. Give the demonstration and be able to answer questions regarding the technique. [NOTE TO TEACHER: This activity could be evaluated, if desired.]

COMPETENCY: *Ability to prepare a variety of foods*

SUB-COMPETENCIES: *Recognize the major nutrients provided by each of the food groups.*

Analyze forms and uses of foods from the food groups.

Identify proper methods of selection and storage for foods.

Utilize principles of preparation which preserve nutrients and enhance flavor and appeal of foods.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
V. Food Preparation A. Fruit and Vegetable Food Group 1. Nutrient sources, functions, and requirements a. Vitamin C	Study textbooks and other resources to find information on sources of Vitamin C in the fruit and vegetable food group. What fruits are the best sources of Vitamin C? Which vegetables are the best sources of Vitamin C?
	Compile a class list of common fruits and vegetables available in your area. Divide the class into small groups and have each group select about five fruits and/or vegetables to study. Determine in how many forms each fruit or vegetable is available, such as dried, fresh, frozen, canned, etc. Check prices for each form at a local supermarket. Study resources to find out how the amounts of Vitamin C vary between different forms of the same fruit or vegetable. Report to the class. Present your report in an interesting manner using charts, pictures, graphs, or other visuals. Summarize the group's report by recommending the "best" buys for Vitamin C content among the fruits and/or vegetables studied by the group.
	Review the requirements for Vitamin C. Is a supply needed daily? What are some popular myths related to the requirements for Vitamin C? Does Vitamin C have any proven healing or preventative powers? Is there any danger in taking mega doses of Vitamin C?
	Discuss in class the functions of Vitamin C in keeping the body healthy. What is the role of Vitamin C in relationship to the body's use of iron? What symptoms might indicate a need for increasing the amount of Vitamin C in one's diet?
b. Vitamin A	Identify fruits and vegetables that are good sources of Vitamin A using textbooks or a Nutritive Values of Foods chart. How many different fruits and vegetables did you find? Does the statement "Vitamin A is high in deep yellow and deep green leafy fruits and vegetables" apply to the fruits and vegetables you identified? Explain.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Analyze a copy of the school lunch menus for one week. Are some good sources of Vitamin A included each day? Every other day? If not, should students plan to include foods rich in Vitamin A in their meals eaten away from school? Why?
	Interview an employee in the school cafeteria to determine how many students select foods high in Vitamin A when given the choice. If students are not allowed to choose, but are served deep yellow and deep green fruits and vegetables, do they usually eat them or leave them on the tray?
	Review the functions of Vitamin A in the body. Discuss in class how Vitamin A affects growth, skin and hair, teeth, infections, and the kidneys. What are early symptoms of a slight deficiency of Vitamin A?
	Locate an RDA chart and look up the recommended allowances for Vitamin A and C for different age groups and sexes. Find your own recommended allowances. Analyze your diet for the past three days to determine if your needs are being met. If you are Vitamin A or C "needy," make a written plan for including fruits and vegetables high in these vitamins in your diet for the next three days. Determine how many servings will be needed and which foods will be used to meet your requirements. Hand in for evaluation. Report in three days on whether or not you carried through with your plan.
c. Folacin	Study information on folacin (folic acid). This B vitamin is found in liver, yeast, and green, leafy vegetables. Discuss the functions and daily requirements for folacin. [NOTE TO TEACHER: *Food and Your Future* by Ruth Bennett White contains good information on folacin.] Why should some green, leafy vegetables be eaten raw?
d. Calcium	Discuss the role of fruits and vegetables in providing calcium in the diet. Which fruits and vegetables provide a significant amount of calcium? Refer to a Nutritive Values of Foods chart for accurate information. How does oxalic acid affect calcium? Why is boiling a clean whole egg in the pan with spinach recommended?
	Summarize your understanding of the importance of fruits and vegetables in a concise written report (one page or less). Include information on nutrients, sources of the nutrients, functions of these nutrients in the body, and the recommended allowances. [NOTE TO TEACHER: Also see pages 89-105 in *The New Nutrition*, Teacher's Edition, for additional activities on fruits and vegetables.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Shopping for fruits and vegetables a. Selection guidelines	Study resources and textbooks for information on the selection of fresh fruits and vegetables. Discuss in class and develop a list of guidelines. Include guidelines such as: big may not be better; too much water can cause deterioration and loss of vitamins; vegetables should feel heavy for their size, etc. List examples for each guideline developed.
	Visit with the produce managers of several supermarkets or stores. Ask when they receive fresh produce, how they care for the fruits and vegetables in stock, how often they remove and destroy deteriorating stock, etc. [NOTE TO TEACHER: This might be a field trip to the store for a class, a specific assignment for a few selected students who could report back to the class, a telephone interview with a produce manager, or a class session with a produce manager as a guest speaker.]
	View Transparencies 30 and 31 on seasonal fruits and vegetables. Discuss whether these charts are applicable for your particular area. What changes should be made?
b. Various forms	List as many forms of fruits and vegetables as you can identify. Compare your list with the lists prepared by other students. Did you omit any fruits or vegetables?
	Volunteer to check the prices of one particular fruit or vegetable in all its available forms. Report to the class on which form is the best buy. [NOTE TO TEACHER: A small reward or prize could be offered to the student reporting the prices on the greatest number of forms for one fruit or vegetable.]
	Research the food values of different forms of the same fruit or vegetable using a Nutritive Values of Foods chart. Which form provides the best nutrition? Are nutrients more concentrated in dried forms of fruits and vegetables? Can the various forms always be used interchangeably? Give examples.
	View a film or filmstrip on the selection of fruits and vegetables. Look for information on the part of the plant that is eaten and the different forms in which it is available.
c. Storage principles	Study resources for information on correct storage techniques for fresh fruits and vegetables. What length of time can most fresh items be stored? How long can potatoes and onions be stored? What temperature is best for storing vegetables in the refrigerator? Should lettuce be washed before use?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Select one fruit and one vegetable from a display tray and describe its proper storage. Give as many details as possible.
	Participate in a small group demonstration on proper storage techniques for fresh vegetables. Include preparing the assigned vegetables for storage, types of containers or packages for storing, length of time the vegetables can be stored without significant loss of nutrients, and where to store the vegetables.
3. Preparing salads a. Salad dressings and sauces	Participate in a "mini-lab" by preparing one of the following: an oil-based salad dressing, a buttermilk and mayonnaise dressing using a prepared mix, a marinade suitable for vegetables, a white sauce or cheese sauce or a soup-based mushroom sauce. [NOTE TO TEACHER: Read "Bank-A-Budget" by Doris Karls and Elaine Jordan in *Illinois Teacher,* May/June 1978, pages 274-277, for a plan for involving students in laboratory food budgeting.] After each group has prepared their assigned dressing or sauce and stored it for later use, present a report to the class on the product your group prepared. What is an emulsion? How is an emulsion formed?
b. Salad ingredients	Participate in a lab with each group preparing a variation of the same fruit or vegetable and utilizing the dressings, marinades, and sauces prepared in the previous lab. [NOTE TO TEACHER: You may want to select a seasonal vegetable that is low in price.] Share "tastings" with the class and be able to describe the preparation method and seasonings used.
	Plan and prepare foods for a fruit salad buffet. Sample menu: fresh fruit salads, hot canned fruit soup, gelatin salads with frozen fruit, stewed fruit, crackers, water. Evaluate the results. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]
	Plan and prepare a salad luncheon. Sample menu: green salads, crackers, iced tea. Evaluate the results. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]
4. Principles of preparation and cookery a. Retaining nutrients	Discuss where the highest concentration of nutrients is located in fruits and vegetables. What does this tell you about preparation of fresh fruits and vegetables? Should fruits and vegetables be thinly or thickly pared? Should the skin be eaten, if possible? Should fruits and vegetables be cooked in their skins?
	Study resources and textbooks to determine which cooking methods preserve nutrients and which methods are likely to destroy nutrients. Should fruits and vegetables be cooked to the "just tender" stage or the "soft and

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	mushy" stage? Why? Should a large amount of water be used when cooking fruits and vegetables? Is a slow cooker recommended for cooking vegetables? Why? What should be done with any cooking liquid remaining when a fruit or vegetable is done?
b. Retaining color	Study resources on retaining color in fruits and vegetables during preparation. Discuss what guidelines were identified? Include suggestions such as: cook green vegetables quickly and until just tender; acids will deepen the color of red vegetables but will change deep green to olive drab; use lemon or lime juice to prevent darkening of fresh fruits, such as bananas, avocados, and apples; white vegetables can be kept white by adding one teaspoon of vinegar to the cooking water, etc.
c. Methods of cooking	Participate in small group demonstrations of proper methods for cooking fresh, frozen, canned and/or dried fruits and vegetables. Study the method you are assigned to demonstrate. Be prepared to use the method effectively and discuss and explain it to the class. Methods to be demonstrated should include simmering, panning, baking, cooking in a pressure pan, stir frying, and microwaving. [NOTE TO TEACHER: Provide students with information, resources, and instruction as needed as they prepare for demonstrations.] Observe the demonstrations and summarize the information gained.
d. Seasoning techniques	Discuss the basic seasonings for vegetables including salt, fat, and pepper. How many different types of fat can be used as seasoning? Which types of fat are high in cholesterol and may need to be avoided by heart patients or persons with hypertension? Why may some persons need to avoid salt? Suggest alternate seasonings that may be used instead of salt or salt substitutes. Examine the labels on containers of various spices and herbs in the home economics department. How many of them are recommended as seasonings for fruits and vegetables? Find a recipe for a fruit or vegetable dish which you can prepare at home for your family. Use a seasoning which you have not tried before. Report the results of your seasoning experiment to the class. Plan and prepare a vegetable buffet. Sample menu: baked beans, buttered carrots, scalloped potatoes, raw vegetable tray, cracked wheat bread, water. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
5. Vegetarian diets a. Lacto-ovo-vegetarians	Define the term *lacto-ovo vegetarian diet.* What foods are included in this diet? Is this a popular type of diet? Is this diet more or less difficult to balance than other types of vegetarian diets?
	Plan a well-balanced lunch menu for a person who is following a lacto-ovo-vegetarian diet. Include at least one serving of food from each food group. Discuss the menus in class and determine if they meet the daily requirements.
b. Lacto-vegetarians	Study resources to find information regarding the lacto-vegetarian diet. What foods are included in this diet? Which food group is not included?
	Work in groups to plan a well-balanced breakfast menu for a person who is following a lacto-vegetarian diet. Be sure to include one-third of the day's calories and nutrients. Present a report to the class on the menu your group planned.
c. Vegans	Invite a dietitian to speak to the class on strict vegetarian diets. Be prepared to ask questions regarding how the vegetarian diet can provide enough protein, calcium, etc. Also ask about combining foods that contain incomplete proteins to obtain complete proteins.
	Develop a chart of various combinations of foods that will provide complete protein. An example is beans and rice. [NOTE TO TEACHER: *Help Yourself: Choices in Foods and Nutrition* by Butterick Publishing contains a good chart on foods included in all kinds of vegetarian diets. Most of the state adopted textbooks also contain some useful information. Other books regarding vegetarian diets should be available in your public library.]
	Plan a well-balanced dinner menu for a person on a strict vegetarian or "vegan" diet. Hand in the menu for evaluation. Discuss the menus developed by other class members following the evaluation. Is it difficult to plan this type of menu? Why? Which of the three vegetarian diets is the most difficult to plan for well-balanced nutrition? Is variety difficult to achieve? Which vegetarian diet could be dangerous if the person planning the meals was not well-informed about nutrition?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
B. Milk and Cheese Food Group 1. Nutrient sources, functions, and requirements a. Calcium	Study resources and textbooks to review information on the nutrients provided by the milk and cheese food group. How important is this food group in the total diet? Can the same nutrients be obtained in adequate quantities from other sources? [NOTE TO TEACHER: Also see pages 51-65 in *The New Nutrition*, Teacher's Edition, for additional activities on milk and milk products.]
	Identify the best sources of calcium in the diet. Check a Nutritive Values of Foods chart if necessary. Can the diet be adequate in calcium if milk or cheese is not included? Suggest some alternate food choices that are reasonably good sources of calcium that might be used by persons allergic to milk.
	Study resources and textbooks to find information on the functions of calcium in the body. If adequate calcium is not included in the diet, where does the body obtain the calcium needed? How are muscle spasms and leg cramps related to low calcium levels? How does calcium help control the heartbeat? Explain calcium's relationship to the ability of the blood to clot.
	Record your total food intake for three days. Circle the foods from the milk and cheese food group eaten during the three day period. Use a Nutritive Values of Foods chart to find and record the amount of calcium for each of the circled items. Total each day's intake of calcium. Were you above or below the recommended 1200 mg level for ages 11-19? How many servings of milk would adjust your intake to the proper level? Is there any disadvantage to including more calcium than required?
	Determine the number of servings that would be required of the following foods to equal the amount of calcium in one cup (291 mg) of milk: broccoli, corn on the cob, yogurt, turnip greens, dried beans, tuna, and sardines.
	Look up the amount of calcium required during pregnancy. Is the amount more or less than is required for teenage females? If the amount of calcium in the diet is not sufficient for the fetus during pregnancy, what will the result be? Why is it difficult for a pregnant teenager to obtain enough calcium for her own body and that of the fetus?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
b. Riboflavin	Define riboflavin. To which vitamin group does it belong? What conditions destroy the riboflavin in milk? Is riboflavin water soluble?
	Study the functions of riboflavin in resources and/or textbooks and be able to discuss its relationship to growth, skin and hair, reproduction, vision, and aging.
	Develop a chart showing ten foods that contain a significant amount of riboflavin. How many of these foods do you eat regularly? Is it difficult to include adequate riboflavin if milk is not used in the diet?
	Discuss in class the recommended allowances for riboflavin. What is the allowance based on? Does riboflavin need to be replaced in the body each day? What are the symptoms of a deficiency in riboflavin?
c. Protein	Compare the quality and quantity of protein in one serving (8 oz.) of milk to the protein in one serving of chicken, hamburger, and egg. Are milk and milk products considered to be good sources of protein?
	Review the functions of protein in the body. Why are proteins described as "building blocks"? Explain the difference in "complete" and "incomplete" protein.
	Determine the recommended allowance of protein for your age and sex. Analyze your diet. Are you getting enough protein? Too much protein? Is protein a nutrient that Americans are often deficient in?
d. Vitamins A and D	Investigate the nutrient functions of Vitamins A and D. Which vitamin is related to preventing night blindness? Dry skin? Faulty bone growth or development? Are these vitamins in the fat-soluble or the water-soluble groups?
	Compare the labels on several cartons of milk including whole, low fat, buttermilk, etc. Do they all contain Vitamins A and D? Do the amounts of each vitamin vary from one type of milk to another? Define the term "fortified." Does the term "fortified" appear on the milk cartons? Which vitamin is most likely to be added to milk? Why?
	Discuss in class sources of Vitamins A and D in addition to milk. Is milk considered the best source of either vitamin? Which vitamin is the "sunshine" vitamin? Explain why it is called the "sunshine" vitamin.
	Look up the recommended allowances for Vitamins A and D. How much of the allowances is provided by two glasses (8 oz. each) of milk per day? How much of the allowances would be provided by four servings of milk per day?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
2. Forms of milk and milk products	Study information on the various forms of milk. Be able to explain the differences in the following types of ready-to-drink milks: raw milk, certified milk, whole milk, skim milk, homogenized milk, and fortified milk.
	Discuss the forms of concentrated milks on the market. Give examples of concentrated milks. How do the prices compare to ready-to-drink milks? What are the advantages of concentrated milks?
	Identify forms of milk that are fermented or "cultured." How are these products used? Why do doctors recommend that this type of milk product be used after taking an antibiotic?
	Study information on types of cream. What is the percentage of fat in heavy cream, light cream, half-and-half, and sour cream? Describe uses for each type of cream.
	Examine the differences in milk products such as ice cream, ice milk, and sherbet. Which product has the most fat? Which has the most sugar? Which is the lowest in calories? Compare the per ounce price of ice cream, ice milk, and sherbet? Which would be the better buy? Why?
3. Using milk and milk products	Suggest ways milk can be used in preparing meals. Include suggestions such as soups, gravies, sauces, custards, puddings, etc. Look in recipe books for ideas.
	Discuss how dried milk can be added to ingredients in casseroles and other dishes to enhance a family intake of milk. Does dried milk have to be used at regular strength or can the amount be increased without detriment to the recipe? Does the dried milk need to be reconstituted before using in a recipe or can it be used as a dry ingredient?
	Study information on the proper storage for various types of milk and milk products. What temperature is recommended for storage of fresh milk? How long can fresh, dried, and canned milk be stored?
4. Cheese and cheese products	View a film or filmstrip on cheese making. What is the enzyme which is added to the milk? Define the terms curd and whey. What is "green cheese"? How long does the ripening or curing process take?
	Study information in resources and textbooks on the various classifications of cheeses such as hard, natural, semisoft, soft, and processed. Identify several examples from each classification.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Compare the nutritional contribution of one serving of cheddar cheese, cottage cheese, and American process cheese to the nutritional contribution of one serving of whole milk. Use a Nutritive Values of Foods chart and copy the information on these four foods in columns. Based on your comparison chart, would cheese be as nutritious as milk?
	Participate in a cheese tasting lab. Which cheeses are mildest in flavor? Which are strongest in flavor? Can the cheeses be classified by appearance and flavor? [NOTE TO TEACHER: Provide as many types and flavors of cheeses as possible for students to sample. Samples should be very small in size.]
5. Using cheese and cheese products	Discuss in class the various uses of cheeses. Suggest ways of using cheeses as appetizers, in soups, salads, entrees, side dishes, desserts, snacks, and garnishes. Is cheese added to recipes for its flavor, its nutritional qualities, or both? Give examples.
	Describe the qualities of process cheese that make it preferable for cooking purposes. Is the cost of process cheese more or less per pound than the cost of other cheeses?
	Demonstrate proper storage techniques for different types of cheeses. What is the length of time that cheese can be stored? If mold appears on the cheese, can the cheese still be used?
6. Principles of cookery	Discuss proper cooking techniques for milk, milk products, and cheese. Why are low temperatures recommended? Why should milk be cooked in a covered pan (two reasons)?
	Participate in a lab on cooking with milk and cheese. Each group might prepare a different menu, but the major ingredient should be milk or cheese. Coordinate plans for the lab so that different cooking techniques are utilized. Each group can explain to the entire class what they prepared and any difficulties encountered. Evaluate the lab. [NOTE TO TEACHER: See Supplement at the end of the Semester Course for details on labs featuring milk and cheese.]
C. Meat and Egg Food Group 1. Nutrients in meats, fish, poultry, and eggs a. Protein	Compare the protein content of one serving of meat (hamburger), poultry (chicken breast), fish (tuna), and eggs (two). Which is highest in protein? Which one is lowest? Figure the approximate cost of one serving of each to see which is the least expensive source of protein and which is the most expensive source.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Study information in textbooks and other resources on complete and incomplete protein. How many amino acids make up foods that contain complete protein? What are the sources of foods having complete protein? What is incomplete protein? What are the sources of foods that contain incomplete protein? Discuss in class the functions of protein in the body. Does the body outgrow the need for protein? What is the recommended allowance of protein for teens?
b. Iron	Review the functions of iron in the body. What diseases develop when there is a deficiency of iron in the diet? Does this deficiency occur frequently in the United States? Are there any dangers involved in having too much iron in the diet? Identify foods that are high in iron. Are these foods that you eat often? [NOTE TO TEACHER: *Food and Your Future* by Ruth Bennett White has excellent charts of foods containing specific nutrients.]
c. B Vitamins	Study information on the B Vitamins. Meats are considered an excellent source of B_{12}, thiamin, niacin, and riboflavin. Are poultry, fish, and eggs also high in B Vitamins? Discuss in class the role of Vitamin B_{12} in combating pernicious anemia. What foods contain Vitamin B_{12}? Which food is the richest source? View a film or filmstrip on the B Vitamins including thiamin, niacin, and riboflavin. What is the richest food source of thiamin? Niacin? Riboflavin? Which B Vitamin is associated with the deficiency disease pellagra? Are B Vitamins water soluble or fat soluble? How would this affect the selection of a cooking method? Summarize the nutritive value of meat and legumes in chart form. [NOTE TO TEACHER: Also see pages 67-88 in *The New Nutrition*, Teacher's Edition, for additional activities on meat and legumes.]
2. Meat substitutes	Identify sources of incomplete protein which can be combined to form sources of complete protein. Use a Composition of Foods table to verify the combinations. Plan and prepare a meatless meal. Sample menu: macaroni and cheese or creamed eggs on toast, salad of choice, hot tea. Evaluate the results. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
3. Forms of meats, fish, and poultry	Explain the term "aged" beef or meat. What effect does the aging process have on the meat? How long is the meat aged? What does aging do to the price of the meat? Discuss the term "cured" when used in relation to meats. What has been added to the meat to "cure" it? Will cured meat keep longer than fresh meat? Give examples of several different kinds of cured meats. Compare the price per pound of cured ham to fresh ham and corned beef brisket to fresh brisket. Which costs the most? Does the price vary during the year? Why? Participate in a class experiment to determine the actual cost of bacon, a cured meat. Fry an entire pound of bacon. Weight the cooked bacon after draining it on paper towels. How many ounces are left? Divide the number of ounces into the price paid for the pound of bacon, then multiply the price per ounce by 16 ounces to determine the actual cost of an edible pound of cooked bacon. Is bacon more expensive than you thought? Suggest other kinds of meat that could be used in place of bacon that would be less expensive. Study resources and textbooks to determine the processes used in "tenderizing" meats. What types of meats are most often purchased in a tenderized form? Report your findings to the class. Define the term "processed" meats. Are frozen meats processed? Are canned meats processed? The most common processed meats are cold cuts. Compare the price per pound of packaged, sliced ham to the price per pound of cured ham. Compare the price of thin sliced turkey in the cold cuts section to the price per pound of frozen whole turkey. What accounts for the difference in price? Are cold cuts convenience foods? If dried beef is priced at $1.25 for three ounces, how much is it per pound? Compare the dried beef price to the price per pound for fresh corned beef. Which is the most expensive? View Transparency 22 on forms in which fresh fish may be purchased. Visit a market and compare the prices of the different forms. Is a whole fish less costly than fish fillets? Study resources to determine in what other forms fish is available. What are the most common forms of canned fish? Is smoked fish generally more expensive than fresh fish or frozen fish? What are some other kinds of cured fish?

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Invite a butcher to demonstrate proper techniques for cutting up and boning fish and chicken for the class. Ask questions about the amount of money that can be saved by purchasing whole chicken and fish and preparing them at home. [NOTE TO TEACHER: Students should be encouraged to practice cutting up and boning fish and chicken at home, if a lab experience would be too expensive.]

Compare the cost per pound of canned chicken to fresh chicken. Compare the cost of frozen turkey to fresh turkey. In each case, which was the most expensive?

4. Buying and storing meats, fish, poultry, and eggs

Study resources and textbooks on forms, cuts, and grades of meats including beef, lamb, pork, and veal. What is the difference in beef and veal? Which part of the animal contains the most tender cuts? What is the purpose of meat inspection and grading?

Write a paper of one page or less describing how to recognize the signs of quality in meats. Include descriptions of color, fat content, bone appearance, and the influence of grades. Turn your paper in for evaluation.

View Transparency 23 on identifying the quality characteristics to observe when purchasing fresh fish. What is the best way to tell if fish is not as fresh as it should be?

Discuss the grades used for poultry. Which grade indicates the highest quality? What other factors can be used to identify quality when selecting fresh poultry?

Visit a large meat market that also has fresh fish or visit a fish market and a meat market. Ask questions of the butcher regarding the various cuts of meat and fish. Also ask the butcher to explain how long and under what conditions to store fresh meat, fish, and poultry. [NOTE TO TEACHER: If a field trip is not possible, students could visit markets on an individual basis and give reports to the class.]

Study resources and textbooks for more information on proper storage techniques for fresh meat, fish, and poultry. Since these items may be the most expensive foods purchased, proper care is vital. Which part of the refrigerator should be used for storage of meats? Should store packaging be removed prior to storage? How tightly should meat, fish, and poultry be wrapped? Give reasons for storage suggestions during class discussion.

Study information on the grading of eggs. What is the highest grade? How many ounces does a dozen extra-large eggs weigh? What do medium size eggs weigh per dozen? Is there a nutritional difference in brown eggs and white eggs?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Discuss the nutrients in eggs. Are eggs considered a good substitute for meat? Why? Is the protein in eggs complete or incomplete?
	Demonstrate for the class the proper storage techniques for eggs. Which end should be up? Should eggs be washed before storing? Should eggs be covered in the refrigerator? How should leftover egg whites and leftover egg yolks be stored? How long can eggs be stored in the refrigerator?
5. Principles of egg cookery	Discuss the versatility of eggs used as ingredients in cooking. Include using eggs for thickening agents, leavening agents, emulsifiers, coatings, bindings for structure, and a glazes on baked goods. Name examples of each egg use. Look in recipe books to find a variety of recipes in which eggs are the main ingredient in foods which could be served as entrees at lunch or dinner. Prepare a class list of the different ways to serve eggs as a main dish.
	Study principles for cooking eggs. Should eggs be cooked quickly or slowly? Should the temperature be high or low? Can eggs be overcooked? Explain.
	Plan and prepare a breakfast featuring eggs and other protein foods. Sample menu: fruit cup, eggs/omelette, sausage/bacon, toast, butter, coffee. Evaluate the results. [NOTE TO TEACHER: See Supplement at the end of the Semester Course for details.]
	Participate in a lab using eggs in various ways. Each group might demonstrate for the class one way of using eggs. For example: Group 1–baked custard (eggs for thickening), Group 2–cheese souffle (eggs for leavening), Group 3–Hollandaise sauce (eggs for emulsifying), Group 4–meat loaf or croquettes (eggs for binding), Group 5–deep fried zucchini (eggs for batters), etc.
6. Principles of meat cookery	Study textbooks to identify the principles of meat cookery. What are the reasons for using low temperatures to cook meat? What factors determine the length of time needed for cooking? Do these principles apply to poultry and fish?
	Observe demonstrations of the moist heat and the dry heat methods for cooking meat, poultry, and fish. Which types of meats should be cooked with moist heat methods? Which types of meats are best cooked by the dry heat methods of roasting or broiling?
	Study charts on seasonings appropriate for meat, fish, and poultry. When should seasonings be added to

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	meats? Which seasonings for meats are favored by your family? Report to the class. [NOTE TO TEACHER: Seasoning charts are included in the textbooks *Food in Your Future* by White; *Guide to Modern Meals* by Ohl, Duyff, and Hasler; and in most recipe books.]
	Participate in a red meats cooking lab. Each group might select a different type or cut of meat, method of preparation, and appropriate seasonings. Plan and prepare appropriate foods to complete a breakfast, lunch, or dinner menu. Following the preparation, share with other groups the planning, preparation, and results your group experienced. What did you learn about cooking red meats?
	Study methods of cooking poultry and fish in textbooks and recipe books. What factor determines the method of cooking used for poultry? Fish is cooked at temperatures ranging from moderate to high. What determines the length of time for cooking fish?
	Work in lab groups to plan a meal using an assigned poultry or fish as an entree. Each group will determine the proper method for cooking and seasoning the entree. Groups should select and prepare a vegetable or salad to complement the entree based on learnings from the fruit and vegetable section. A milk or cheese product may also be planned to complete the menu. Plans need to be submitted for teacher approval prior to marketing day. [NOTE TO TEACHER: Assignments should be as varied as time and finances permit. Groups preparing fish as an entree should plan to prepare and serve their meal in one class period since fish can be cooked quickly. Those groups preparing poultry may need more than one period depending on the cooking method selected. Plans submitted for approval should reflect knowledge of meal planning, nutrition, cooking methods, and time management.]
	Plan and prepare a simple family meal featuring meat. Sample menu: broiled or baked chicken, steamed vegetable, convenience bread, iced tea. Evaluate the result. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]
D. Bread and Cereal Food Group 1. Nutrients in grains a. Carbohydrates	Review in textbooks and other resources the nutrients found in the bread and cereal food group. Which part of the grain yields the most carbohydrate? Cellulose (fiber) is found in which part of the grain? [NOTE TO TEACHER: Also see pages 107-120 in *The New Nutrition*, Teacher's Edition, for additional activities on bread and cereal.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Discuss in class the recent trend toward recommending high carbohydrate diets for athletes rather than the traditional high protein diets. Explain why a plate of spaghetti provides more "quick" energy before competition than a steak and salad. [NOTE TO TEACHER: *Guide to Modern Meals* by Shank, et. al, contains a good unit on Food and Fitness.]
	Write a brief paper describing how the body uses carbohydrates. Include information on the number of calories per gram, the name of the end product following digestion, what happens if there is a shortage of carbohydrates when the body needs them, how much reserve is stored in the liver and tissues, the efficiency of the body in burning carbohydrates, and the number of servings suggested in the Recommended Daily Allowances. Turn your paper in for evaluation.
b. Incomplete proteins	Define incomplete protein or complementary protein. What makes proteins from grains incomplete? What other types of protein foods should be included in the same meal to ensure that all the protein can be utilized by the body to best advantage?
	Participate in class competition to see who can list the most combinations of foods that provide complete protein when eaten together. Examples: cornbread and dried beans, cereal and milk, and macaroni and cheese. Include ethnic and regional foods. [NOTE TO TEACHER: Set a time limit of five minutes or so to complete this activity. Lists should be checked for accuracy before naming the winner. Give a small award or a special privilege to the class member with the longest list.]
c. B Vitamins	Discuss the contribution of B Vitamins from grain and cereal products. Which B Vitamins are available in these products?
	Study in textbooks and other resources the functions of thiamin. What effect does thiamin have on the brain? On digestion? On appetite? On the burning of glucose for the release of energy?
	Look up the thiamin requirements for different age groups in an RDA table. What effect does the teen growth spurt have on thiamin requirements? What conclusions can be drawn about the relationship of thiamin requirements to age, sex, and activity levels?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Discuss the functions of Vitamin B_6. What are symptoms associated with deficiencies of this B Vitamin? What is the relationship of Vitamin B_6 to niacin? Compile a list of ways to retain the B Vitamins during food preparation. What elements destroy Vitamin B_6? Is Vitamin B_6 added to enriched food products? Why?
d. Nutrient enrichment	Look in textbooks for definitions of the terms *enriched, fortified, converted,* and *restored.* Are these processes required or voluntary? Explain and discuss each process. Read current articles related to the enrichment of cereal products. Is there any controversy over the amount of enrichment some products contain? Bring cereal boxes to class for comparison of the labels. What percentage of the RDA does one serving of each cereal provide? Is there a difference in the amount of enrichment added to the various products? What other grain products are enriched? Compare the Vitamin B enrichments on the labels to the federal enrichment standards for grain products. [NOTE TO TEACHER: The textbook *Food in Your Future* by White contains the federal enrichment standards in Table 11-4].
2. Buying and storing grain products	Study resources to determine guidelines for buying grain products. Which grain products provide the most nutrition for the money? Which types of grain products provide the least amount of nutrition for the money? If a family likes only white bread, what type should they purchase to get the most nutrients? Determine the cost of making bread at home. Divide into groups and have each group figure the cost of making a different type of bread such as a whole-wheat loaf, a white loaf, cornbread, biscuits, hot rolls, etc. Figure the cost per serving for the home prepared product and then compare the cost to the per serving cost of commercial ready-to-eat products, frozen products, and mixes. Prepare a chart showing the costs of the various products. Compare the costs of cereal products per serving. Compare shredded wheat, corn flakes, a pre-sugared or sugar coated cereal, instant oatmeal, quick cooking oats, and regular oats. Which product costs the least amount of money per serving? Which product costs the most money per serving? Is the difference in cost significant? Which products would provide the most nutrition for the money?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Develop a list of storage guidelines based on information in textbooks and other resources. How long will a loaf of bread stay fresh when stored at room temperature? How long can a loaf of bread be stored in the refrigerator without becoming stale? How should opened cereal and pasta products be stored to protect freshness?
	Discuss whether grain products and cereals should be purchased in large quantities if the large size is more economical? Would the product become stale before it could all be used? Is adequate storage space available? Can breads be frozen? Are "day-old" breads a good buy?
3. Cooking pasta and other cereal products	Demonstrate for the class the proper techniques for cooking cereals and pastas. Be able to explain each step in the process and answer any questions which might arise.
	Evaluate the demonstrations presented in class. Which products turned out best? Identify reasons that may have caused problems with some products.
	Practice cooking a cereal or pasta product at home during the coming week. Report to the class on the results.
	Discuss in class the value of cereals and pasta products as meat extenders in casseroles and other recipes. Is this an effective way to save money on the food budget? What effects would the casseroles have on nutrition? Name other ways to enhance the nutritive values of cereals and pastas. Examples: cooking cereal in non-fat dry milk or adding cheese and milk to macaroni. What is the purpose of each addition? What nutrients would each addition provide?
	Plan and prepare a low-cost meal featuring cereal or pasta. Sample menu: tuna/rice casserole, green beans, coleslaw, quick bread, fruit in season, iced tea. Evaluate the results. [NOTE TO TEACHER: See Supplement at end of Semester course for details.]
4. Baking with flour a. Quick breads	Study textbooks and other sources to determine techniques for mixing and baking quick breads. What are quick breads? Give some examples. What kinds of leavening agents are used in quick breads? What are the functions of the other ingredients basic to quick breads?
	Participate in a quick breads lab on muffins and biscuits to develop skill in preparing batters and doughs. Compare the characteristics of each product to characteristics of a standard product. [NOTE TO TEACHER: See Supplement at end of Semester Course for details.]

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Find a recipe for a quick bread mix that can be prepared in several variations. Prepare the mix and have each lab group cook one of the variations. Evaluate the mix as to time that might be saved, product acceptance, and cost per serving. Compare the cost per serving to the cost per serving of commercial baking mixes. Compare the products to the "scratch" products made in the previous lab.
	Plan a bake sale featuring quick breads as an FHA/HERO fund raising project. Assist with the preparation and pricing of the breads by figuring the cost of ingredients and the amount of profit needed. If ingredients are donated, base the prices on comparable commercial products.
b. Yeast breads	Study information in textbooks and other resources on the techniques involved in making yeast breads. What is the leavening agent in yeast breads? What ingredient acts as food for the leavening agent? In what forms is yeast available? Explain the terms gluten, fermentation, kneading, and proofing or rising.
	Select a recipe for homemade yeast rolls. Figure the cost of the ingredients and then compare the per serving cost to commercial convenience products available at the supermarket. Obtain prices for mixes, ready-to-bake rolls, ready-to-serve rolls, refrigerated rolls, and frozen rolls. When only the cost is considered, which product would be the least expensive? Which would be the most expensive? Other factors which need consideration are: time available for preparation, quality of the products, and individual taste preferences.
	Participate in a yeast breads lab. Each group might prepare a different product from the same basic dough. Evaluate the products for texture, appearance, and taste. [NOTE TO TEACHER: If several classes are preparing yeast breads at one time, they could possibly cooperate by doing different steps each day until each group has mixed dough, kneaded and shaped dough, and baked and tasted the products. Each student needs to experience all steps in the yeast bread process. See Supplement at end of Semester Course for details.]
c. Cakes, cookies, and pastries	Study information in textbooks and other resources about preparation of cakes, cookies, and pastries. What are the three types of cakes? What are the basic ingredients in cakes? Describe principles of mixing cakes by the conventional method. Describe principles of mixing cakes by the quick method. How do the mixing methods for foam

or sponge cakes differ from methods for mixing butter cakes? Explain differences in pan preparation for baking foam type cakes and butter cakes. Demonstrate proper arrangements of cake pans in oven for best circulation of heat. Describe methods of testing for doneness.

Plan a cake baking lab and make cakes of all three types. Groups should share experiences and information gained with the other groups. [NOTE TO TEACHER: See Supplement at end of Semester Course for details. Survey the class to determine how many students have made cakes. If students are experienced in baking butter cakes, they should select as a lab experience a foam or sponge cake they have not prepared before. Groups can be formed from students with lots of experience to groups of students with no experience. If any students have previously had experience with making all three types of cakes, let them demonstrate the preparation of several types of frostings for the class. The demonstration frostings can then be used to frost the cakes prepared in the lab.]

Study information on making different types of cookies including drop, rolled, molded, refrigerator, pressed, and bar. Explain the differences in these various types of cookies. What ingredients are used in cookies?

Discuss in class the nutritional value of cookies. Are some kinds of cookies more nutritious than others? Find examples of nutritious cookie recipes in cookbooks.

Bake two different types of cookies at home. Bring three of each type to class for evaluation. Cookies should be judged on appearance, color, texture, and taste.

Observe a teacher demonstration on four types of pastry crust including the cold water method (conventional), the hot water method, oil pastry, and a graham cracker crumb crust. Which method appears to be the simplest to make? Which crust has the flakiest texture? What are the basic ingredients in a traditional crust? What are the basic ingredients in a crumb crust?

Study resources for information on the various types of pie fillings including cream, chiffon, custard, and fruit. Discuss the methods for thickening different types of pie fillings. Which type of pie does not require refrigeration? What can result from not refrigerating other types of pies?

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Participate in a pastry lab. Groups may select different types of fillings and crusts. Experiences should be shared so that all students gain some knowledge of the various techniques. Evaluate the pies for appearance and taste. [NOTE TO TEACHER: Complete all steps in one lab day, if possible. However, pie crusts may need to be made one day and refrigerated; fillings can be made on the second day, placed in the crust and cooked.]

COMPETENCIES:

Ability to evaluate commercial food processing in terms of family health

Ability to preserve food for future use

SUB-COMPETENCIES:

Evaluate the use of food additives in processed foods.

Analyze food processing and marketing techniques.

Outline new trends in food processing.

Apply nutrition knowledge and food preparation skills to the home preservation of foods.

Prepare convenience foods at home.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
VI. Food Preservation and Processing A. Food Additives	Study references or view a filmstrip to summarize reasons additives are used in foods. Which additives are nutritious? Which are not? Study food labels to compile a list of minerals and vitamins which are often added to foods. Which foods are enriched with these nutrients? Why is it important for these foods to be enriched? Discuss other ways that foods can be nutritionally enriched with additives. Listen to a dietition describe the food selection difficulties experienced by people with diabetes, heart trouble, and high blood pressure. Why is it important for them to restrict their salt and sugar intake? What foods do they have to avoid? Plan a dinner party for a group of six people; two of the people have high blood pressure and one is diabetic. Rate the menus according to their variety in taste, texture, aroma, and color. Bring to class packaging containers for cereal, bread, whipping cream, soft drink, milk, chips, ice cream, gelatin, canned soup, candy, mayonnaise, canned fruit, and margarine. Examine the labels to determine the additives used. Make a list of foods that would be available if all additives were banned. Discuss the implications such a ban would have on the consumer. What changes and adjustments would be necessary to maintain a balanced diet? Examine five labels from food packaging and list the additives. Make a chart comparing the food additives in these five products. Write or call the food processing plants for each of the five products. Ask a company representative from each plant to describe the food additives in their product. Determine why the chemical substances (additives) are needed and their effects on flavor, texture, and keeping quality. Add your findings to the chart.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Study references to interpret laws related to the use of food additives. Explain the laws which regulate amounts of additives used. What effects do these laws have on nutrition? What role does the Food and Drug Administration play in the regulation of additives? What is the significance of the Delaney Clause?
	View a transparency showing the annual intake of additives in the United States. (See Transparency 43.) Find labels of commonly eaten foods which are high in sugar and salt. Read recipes for preserving foods. What additives do they call for? Discuss the effect that sugar and salt have on foods. What nutritional factors relate to large consumptions of these additives? Suggest ways you could reduce your sugar and salt consumption.
	Form groups to debate the pros and cons of using additives in processed foods. Consider the benefits and risks relating to the consumer and the industry. Include cost, health, convenience, variety, etc. After the debate, outline guidelines to encourage safe use of additives.
B. Processing and Marketing Techniques	Tour or view a film of a food processing plant. Determine how food is stored, packaged, and shipped. What kind of machinery is used in the processing? What jobs do employees do? How is the safety and quality of the food product controlled within the plant?
	Plan a day's diet of nutritious foods you like. Exchange menus with a classmate and analyze the menus. Trace each food on the menu to determine where each food comes from, how it gets to market, how food safety is ensured, and what factors affect cost. Compare your findings with those of classmates. How many foods are from your local region? How many foods must be imported from out of state? Out of the country?
	Discuss the effects that processing on the nutritional value of foods. Discriminate between the terms *enrichment* and *fortification*. Compile lists of food products that are enriched and fortified. Why are these processes necessary? Discuss advantages and disadvantages of food processing as it relates to the nutritional value of foods.
	Work in groups to trace the steps a processed food goes through on its way to the consumer. Determine how the food is grown, harvested, transported, processed, packaged, stored, and distributed. Present your findings to the class in the form of a poster, bulletin board, flip chart, or mobile.

CONCEPTS | **LEARNING AND EVALUATION EXPERIENCES**

Select a method of food processing to research. Write to a food processing company for information concerning the processing method. Draw a flow chart showing the various steps involved in the processing. Share the flow chart with the class by drawing it on the blackboard or making a transparency. Explain why each step is important.

C. New Trends

Define the terms *artifical, fortified, formulated,* and *meat analogues.* Visit a supermarket and find examples of synthetic foods. Interview neighbors or other adults to determine how well these foods are accepted by consumers. Share your findings with the class.

Examine a display of various synthetic and substitute foods, such as diet foods, infant formulas, hospital foods, and textured vegetable protein. Discuss the importance of each food. How do the foods differ from the foods they have replaced? For what populations were the foods developed? What difficulties were encountered when the food was introduced on the market?

Research reliable sources to obtain information about future plans for new food products. Assume you are in charge of marketing one of the foods in the U.S. market. Predict the acceptance of the new food by the consumer, processors, and government. What problems may be encountered? Prepare a presentation to introduce the product to your classmates. Discuss the benefits and shortcomings of the product. [NOTE TO TEACHER: Sources might include dietitions, research departments of companies and universities, agricultural extension agents, home economists, FDA, and USDA.]

Invite a nutritionist or a chemist to class to discuss the differences between natural and synthetic foods. Ask the speaker to explain the procedure that scientists go through to make synthetic foods. Compare the chemical, nutritional, and economical differences between the two. [NOTE TO TEACHER: Have students prepare questions to ask the speaker in advance.]

Assume you are a scientist producing a new food to meet the needs of individuals with eating difficulties. Interview people with special needs to determine what kind of foods are needed. Needs might include problems relating to physical handicaps, nutritional needs, financial difficulties, or limitations in eating environments. Write a brief description of the new food product and a justification for producing the product.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
D. Home Preservation of Foods	View Transparency 30 and 31 on when fruits and vegetables are in season. Interview a produce manager at a local supermarket to determine the price difference when fruits and vegetables are in and out of season. Why do the prices vary? Discuss situations when buying and preserving fresh fruits and vegetables is less expensive than buying processed foods. When are processed foods cheaper? Discuss commercial and home methods of canning, freezing, and drying foods. Discuss the scientific principles on which each method is based. What agents are used to preserve the foods' color. Compile a list of factors that affect the method used when preserving foods. [NOTE TO TEACHER: Possible factors might include availability of fresh products; amount of food to be preserved; water content of food; acidity of food; maturity of product; quality of product; cost of process; family food preferences; family nutritional needs; and availability of equipment, space, time, and energy.] Review the dangers relating to botulism. Study references to determine safety tips to prevent botulism from occurring when canning at home. Summarize your findings by writing a list of guidelines to follow when canning food and before eating it. Prepare a display of equipment and packaging materials needed for canning, freezing, and drying foods. Categorize the items according to the type of preservation method with which they are used. Determine how to operate the equipment by watching a demonstration and reading manufacturers' directions. Explain why certain packaging materials are more suitable than others when preserving foods.
1. Canning	Watch a demonstration of canning foods by the water bath (cold pack and hot pack) and steam pressure methods. Outline factors determining the best method to use for canning various foods. Develop a list of foods that can be canned by each method. Collect recipes for various kinds of fruit spreads, such as jelly, jam, preserves, conserves, fruit butter, and marmalade. Hold a taste test to compare the color, texture, and flavor of each spread.
2. Freezing	Work in groups to prepare and freeze fruits by several different methods, such as dry sugar pack, pectin pack, syrup pack, unsweetened pack, and liquid pack. Label each container with the method used. After several days

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	thaw and taste the foods. Compare the color, texture, and flavor. Discuss the kind of anti-darkening agents used in each method. What processes would be followed to freeze vegetables?
3. Drying	Participate in a taste comparison of dried foods. Taste samples of fresh and dehydrated fruits, vegetables, and meats. Discuss the steps in dehydrating foods with a dehydrator, a conventional oven and the sun. Outline the advantages and disadvantages of each method. Make plans to dehydrate fruits and vegetables using the most suitable drying method for your class.
	Prepare a presentation to illustrate the various methods to preserve a selected food in the home. Compare the preparation steps, time, equipment needed, and cost of each method. What changes take place in the food's nutritive value, color, shape, texture, and flavor. Present your findings using displays, posters, bulletin boards, flip charts, etc.
E. Making Your Own Convenience Foods	Take a field trip to a supermarket to make a list of available convenience foods. Find conventional recipes for each food. Discuss ways that each convenience food could be partially or fully prepared at home and kept for later use. [NOTE TO TEACHER: Convenience foods may include rolls, waffles, casseroles, sauces, soup, stew, pizza, egg rolls, pie shells, cookies, cakes, etc.]
	Make a list of convenience foods commonly used in your home. Categorize the list according to the type of convenience food: ready-to-serve, partially prepared, or requiring added ingredients. Devise ways that each convience food could be prepared from scratch and stored in the same form.
	Discuss the various convenience forms in which foods are available. Example: cookies are available in dry mix, frozen dough, and fully prepared forms. Conduct cooking labs to prepare homemade versions of each form. Package each form and label with the number of servings per package, the cost per serving, ingredients, directions to complete preparations, and other ingredients to add. Prepare and compare the homemade forms to commercial forms. Consider cost, time, taste, texture, color, and variety. [NOTE TO TEACHER: Students might work in groups to test various forms of several different products.]

CONCEPTS

LEARNING AND EVALUATION EXPERIENCES

Prepare convenience mixes which can be made at home. Examples: master mix, cookie mix, white sauce mix, red sauce mix, chocolate mix, cake mix, pancake mix, brownie mix, cheese sauce mix, chili seasoning mix, corn bread mix, Italian seasoning mix, coating mixes, spiced tea mix. Plan menus utilizing the mixes prepared in class. Example: oven-fried chicken (coating mix), broccoli with cheese sauce, tossed salad with Italian dressing, corn bread, brownies, spiced tea. Prepare the meal and evaluate the results. [NOTE TO TEACHER: Have each group plan a different menu utilizing some of the mixes in different ways when possible.]

COMPETENCY: *Ability to analyze career and job opportunities*

SUB-COMPETENCIES:

Describe job and career ladders in food and nutrition.

Determine competencies needed for job success.

Relate food and nutrition skills to other occupations.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
VII. Exploring Careers in Food and Nutrition A. Careers in Food and Nutrition 1. Career ladders 2. Employment outlook	Study references to identify opportunities for entry level skilled, technical, semiprofessional, and professional jobs and careers related to food and nutrition. [NOTE TO TEACHER: Use resources such as the *Dictionary of Occupational Titles* and *Occupational Outlook Handbook* as well as textbooks.]
	Survey your community by using newspaper want ad sections and the telephone book yellow pages to determine how many job opportunities related to food and nutrition exist in your locale. Compile a list of companies that would need employees with food and nutrition skills.
	Listen to a panel of resource persons discuss job opportunities in the field of food and nutrition. [NOTE TO TEACHER: Panel members might include a dietitian, a home economist in business, an extension home economist, a restaurant owner, a grocery store manager, a food broker representative, a school guidance counselor, etc.] Which jobs appear most promising for the future?
	Define the term *career ladders*. Does experience or training allow one to enter the ladder in a higher position?
	Select a job related to food and nutrition that interests you, and interview a person employed in that job. How did the person get started? What education and/or training was required to get the position? What opportunities for advancement are available?
	Develop a career ladder of food and nutrition related occupations which includes career levels, job titles, duties, and minimum qualifications.
	Read and report on articles in business journals and magazines on the employment outlook for the next five to ten years. How many are related to either food or nutrition? Where are the projected jobs?
3. Personal qualities for job success	Interview an employer and ask what personal qualities are sought in interviewing prospective employees. Report to the class and compile a list of the qualities most often mentioned.

CONCEPTS	LEARNING AND EVALUATION EXPERIENCES
	Discuss responsibilities associated with entry level jobs in food service. What personal characteristics would be desirable in a job of this type? Why is responsibility and dependability important for employability? How can you develop responsibility in yourself? Select an example of a semiprofessional or skilled job in food and nutrition. Describe personal characteristics that would be necessary for that job. Examples: patience and understanding. Discuss the importance of attitudes in any job. What effect can an employee with negative attitudes have on a business? On other employees? Prepare a bulletin board which depicts positive attitudes that lead to job success. [NOTE TO TEACHER: *Your Attitude Is Showing* (reference book, assignment manual, and answer book) from the Center for Occupational Curriculum Development, UT Austin, P.O. Box 7218, Austin, TX 78712 would be a good source of information for students.]
4. Educational requirements	Identify educational preparation needed for various jobs related to food and nutrition. What high school subjects would provide a good background for careers in this field? What post-secondary training opportunities are available? What colleges offer degrees related to this field? Invite a counselor or professional in the community to describe the education and training needed for advancement in a food and nutrition career. Study college and university catalogs to identify training available for food and nutrition professional careers. Visit the campus, if possible, to talk with program directors. Listen to a local community college representative describe training opportunities and programs related to food and nutrition. What is the cost of the training? How long is the training? Are short courses offered? Are night classes available? What are the admissions requirements? What job placement services are offered?
B. Using Food and Nutrition Skills in Other Occupations	Brainstorm to list careers or jobs outside of food and nutrition where employees would benefit by knowledge and skills in food and nutrition. Discuss the value of food and nutrition knowledge and skills as a personal and family benefit during a lifetime. How important is food in relation to health? Identify the importance of good management techniques in meal planning for families, especially in families where parents assume dual roles.

SUPPLEMENT TO
FOOD AND NUTRITION
SEMESTER COURSE

This supplement was prepared by Patsy Hallman and Sue Jones at Stephen F. Austin State University as part of a research project, "Nutrition Education in Vocational Home Economics," funded by the Research Coordinating Unit, Texas Education Agency.

SUGGESTIONS FOR SEMESTER COURSE LABORATORY EXPERIENCES*

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENT TASKS
Nutrients and Their Functions	1. Recognize major nutrients and their food sources. 2. Determine functions of major nutrients. 3. Develop communication skills. 4. Verify accuracy of nutrition information.	*Nutrition Skit* Students prepare a skit with script and costumes. Foods or nutrients are the actors; they tell their functions and sources. Present the skit to another class or at an elementary school.	None	Plan Skit. Make costumes. Write script.	Perform skit for a group.
Recommended Daily Allowances	1. Determine RDA's for adolescent boy and girl. 2. Compare RDA's for various age groups. 3. Determine foods which supply RDA's.	*Recommended Daily Allowances* Using food models and comparison cards (available from Dairy Council), plan a day's diet for an adolescent boy and girl. Make into a display.	None	None	Each group should determine the nutrient level in a day's diet for two different nutrients.
Nutritious Snacks	1. Determine the nutritive value of favorite snacks. 2. Distinguish between nutritive snacks and empty kilocalorie (kcal) snacks. 3. Develop a taste for nutritive snacks. 4. Use small appliances in preparing snacks.	*Nutritious Snacks* Fruit/Cheese Platter Peanut Butter/Cereal Bars Milkshakes	*Milk Drinks* Use the following small appliances to prepare snacks: blender, toaster oven, mixer, grill, etc.	None	Student 1: Prepare fruit. Student 2: Prepare shake. Student 3: Prepare bars. Student 4: Assist with bars.
Nutrition of Food Away from Home	Evaluate menus for contribution to daily dietary needs.	*Food Away From Home* Using food models, prepare an exhibit of a typical meal from the following: a. School cafeteria b. Fast-food restaurant c. Foreign food restaurant d. Gourmet restaurant	None	None	Each group should prepare an exhibit from a different type of restaurant. Prepare an evaluation of contributions to dietary needs.

*No class will have resources for all these experiences. The teacher should choose those most appropriate for the class.

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENT TASKS
Regional Foods	1. Accept new foods. 2. Appreciate a variety of foods from the U.S.	*Regional Food Taste Event* After a study of foods from various regions of the United States, select dishes representing specific regions to prepare for a tasting event.	None	None	Each group prepares one dish representing a specific region of the United States.
Foreign Foods	1. Accept new foods. 2. Appreciate foods from other cultures.	*Foreign Food Taste Event* After a study of foods from other countries, select one dish to prepare for a foreign food tasting event.	None	None	Each group prepares one dish representing a foreign country.
Weight Control	1. Develop calorie-controlled menus for weight loss or weight gain. 2. Plan exercises for weight control.	*Weight Control Clinic* Plan a diet and exercise clinic. Develop sample menus appropriate for teens. Prepare handouts on diet and weight. Work with school nurse and P.E. teacher to develop exercises. Set up a weekly session for participants.	Exercises for specific purposes	Preparation of menus, handouts, forms, etc.	Weigh-in session Exercise session Provide information on diet.
Fat and Cholesterol in the Diet	1. Identify foods high in fat. 2. Identify foods with hidden fat. 3. Enumerate different characteristics of fats containing saturated and unsaturated fatty acids. 4. Identify common sources of cholesterol in diet. 5. Determine high caloric contribution of fat to the diet. 6. Review the relation of dietary fat to heart disease.	*Display on Fats* Arrange a display of foods containing fat (include foods with hidden fat). Include some uncooked meats so that differences in fat can be noted and saturation of fatty acids discussed. Use books and charts to determine amount of fat in foods shown and kcal from fat. Group foods by content of mostly saturated fats or mostly unsaturated fatty acids.	None	None	Make a display. Group foods by saturated or polyunsaturated fatty acid content. (The firmer the fat, the more saturated the fatty acids.)

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENT TASKS
	7. Classify foods as contributors of saturated or polyunsaturated fatty acids.				
Carbohydrate Foods	1. Identify foods which contain carbohydrates. 2. Classify carbohydrate in foods as complex carbohydrate, natural sugar, or refined sugar. 3. Determine fiber content of some carbohydrate foods. 4. Compare nutrient density of snack foods containing carbohydrates, including favorite snacks of class members. 5. Prepare nutritious snacks containing carbohydrates.	*Snack Foods Containing Carbohydrates* Suggested menu: Cheese and Crackers Texas Trash Vegetable Sticks Fresh Fruit with Cream Cheese Dip Fruit Punch	None	None	Each group of two students should prepare a different snack food. Compare and evaluate for nutritional content.
Foods Containing Sodium	1. Identify foods high in sodium (Na). 2. Identify foods with similar nutritive value, but low in Na. 3. Compare Na content by reading labels and charts.	*Sodium in Foods* Plan a display or tasting session with foods high and low in sodium. Examples: *Low Na* *High Na* Vegetable sticks Potato chips Fruit Salted nuts Chicken salad Corn chips Toast strips Cold cuts Fresh peanuts Pickles Olives	None	None	Each group prepares one high and one low sodium food. Find the sodium content of each and discuss with the class.

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENT TASKS
Food Fads and Fallacies	1. Determine characteristics of fad diets. 2. Evaluate fad diets. 3. Determine caloric content of fad diets.	*Fad Diet* Beverly Hills Diet (Fruit only) OR Cambridge Diet (Powdered mix)	None	None	Prepare one meal from a day's menu of the fad diet chosen. Use the Daily Food Guide to analyze. Suggest low calorie foods to improve nutrition. Determine caloric content.
Health Foods	1. Compare nutritional value and cost of same foods from health store and supermarket. 2. Analyze nutritional claims of health foods.	*Foods from Health Stores and Supermarkets (exhibit only)* Salt, dry milk, flour, peanut butter, cereal, salad oil	None	None	In groups, determine nutritive value and cost of products from health food store and supermarket. Prepare and display a chart showing the results.
Meals for Special Groups	1. Modify meals to meet special needs of individual family members: elderly, pregnant, ill, or individual with health problem. 2. Verify nutritional adequacy of meals. 3. Identify similarities as well as differences in individual needs.	*Exhibit for Special Needs* Using food models, show a meal with variations planned for individuals with special needs: Elderly Young child Pregnant woman Diet for hypertension or heart disease, etc.	None	None	Group I: Elderly Group II: Two-year-old Group III: Pregnancy Group IV: Heart disease patient
Individual Nutrient Needs	Determine individual nutrient needs based on sex, size, age, and activity.	*Factors Affecting Nutritional Needs* Height Weight Pinch test Activity level	Demonstrate pinch test, measuring, and weighing techniques.	None	In groups of two, measure and weigh. Determine activity level and recommended weight for height.
Eating Patterns	1. Determine factors affecting food choices. 2. Read and follow label directions. 3. Determine contribution convenience foods make to nutritional needs, cost, time, energy, and family acceptability.	*Convenience Foods* **Sample Menu: Frozen Chicken Sticks Frozen Peas Instant Rice Sliced Bread Margarine Water	Display/demonstrate types of convenience foods. Give instructions on reading and following label directions. Show simple table setting.	None	Student 1: Prepare chicken sticks. Student 2: Prepare peas. Student 3: Prepare rice. Student 4: Set table with bread, butter, and water.

** The examples shown may not fit the needs and interests of all classes. Teachers and students may choose different menus which are similar in content.

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENT TASKS
	4. Develop awareness of convenience foods available. 5. Develop skill in use of simple kitchen appliances. 6. Use table setting skills.				
Contemporary Foods	1. Classify contemporary foods. 2. Develop skill in using measuring tools. 3. Determine nutritional value in measured portions of food. 4. Compare caloric content of types of food. 5. Compare cost, time, and palatability of foods.	*Comparison of Conventional , Convenience, and Fast Foods* French Fries Lemonade	Measuring Weighing Computing cost of foods	None	Each student group prepares French fries and lemonade in a different form: fresh, frozen, fast-food. Compare and evaluate in groups before eating.
Time-saving Meals	1. Prepare nutritious meals in limited time (25 minutes). 2. Rate acceptability of meals. 3. Review table setting rules for Blue Plate Service. 4. Review table manners. 5. Use principles of work simplification and time management.	*Quick Meals* Microwave Beans with Weiners Frozen Greens Brown and Serve Rolls Ice Cream Sundaes Water	Use of microwave oven and other time-saving appliances and techniques	None	Student 1: Prepare beans and weiners. Student 2: Prepare vegetable. Student 3: Prepare rolls; set table. Student 4: Prepare dessert.
Food Safety and Sanitation	1. Recognize sources of food contamination. 2. Explain practices necessary for food safety.	*Bacterial Growth in Foods* Press finger to agar plate after touching the following: counter tops, improperly cleaned utensils, face, hair. Prepare one agar plate with just-washed hands.	Proper storage techniques for various foods. Proper cleaning of utensils and appliances.	None	

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENT TASKS
		Label, cover, and store agar plates at room temperature for 48 hrs. Inspect agar plates and review rules for sanitition.			
Food Substitutions	Develop skill in substituting available foods for unobtainable ones.	*Exhibit of Food Substitutions* Prepare an exhibit of food substitutions. Examples: Grapefruit juice for orange, Buttered rice for mashed potatoes, Coleslaw for lettuce salad, Lite cheese for milk.	None	None	Each group should contribute foods to the exhibit, providing labels showing nutrient similarities and differences in suggested substitutes.
Fruits	1. Determine nutritional value of different *kinds* of fruit. 2. Determine nutritional value of different *forms* of the same fruit. 3. Plan a variety of ways to include fruit in meals and snacks. 4. Prepare fruits in various forms: peeling, paring, stewing, congealed dishes.	*Fruit Salad Buffet* Fresh Fruit Salads Hot Canned Fruit Soup Gelatin Salads with Frozen Fruit Stewed Fruit Crackers Water	Reading recipes Preparing raw fruits Gelatin salad preparation Dried fruits	None	Student 1: Prepare fresh fruit salad. Student 2: Prepare fruit soup. Student 3: Prepare gelatin salad. Student 4: Prepare stewed fruit; set table.
Green Salads	1. Determine nutritive value of salad vegetables. 2. Review storage of fresh vegetables. 3. Prepare salad greens and other fresh vegetables. 4. Use a variety of ingredients in making salads.	*Salad Luncheon* Green Salads Crackers Iced Tea	Preparation of salad vegetables	None	Students 1 and 2: Prepare coleslaw with carrots, onion, and peppers. Students 3 and 4: Prepare green salad with endive, romaine, and iceberg lettuce; green onions, cucumbers; and radishes.

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENT TASKS
Vegetables	1. Determine nutritional value of different vegetables. 2. Determine nutritional value of different *forms* of the same vegetable. 3. Plan a variety of ways to include vegetables in meals and snacks. 4. Prepare vegetables in various forms. 5. Practice conservation of nutrients in preparing vegetables.	*Vegetable Buffet* Baked Beans Buttered Carrots Scalloped Potatoes Raw Vegetable Tray Cracked Wheat Bread Water	Methods of preparing vegetables: steamed, scalloped, stir fried, canned Variety of ways to conserve nutrients	Prepare beans for baking. Prepare potatoes for oven. (Teacher places beans and potatoes in oven prior to laboratory.)	Student 1: Prepare carrots. Student 2: Bake beans; set table. Student 3: Prepare scalloped potatoes; help student 4. Student 4: Prepare raw vegetable tray.
Food Preservation	1. Compare nutritional value of foods preserved in different manners. 2. Package foods for freezing. 3. Label freezer foods. 4. Make time charts for use of frozen foods. 5. Prepare raw foods for freezing.	*Freezing Foods* Fresh Fruit Fresh Vegetables Leftovers	Blanching Enrichment: jelly making	None	Students 1 and 2: Prepare fruit. Students 3 and 4: Prepare vegetables.
Milk Dishes	1. Compare nutritive value of different forms of milk. 2. Use different forms of milk. 3. Use principles of milk cookery. 4. Use thickening in preparing milk dishes.	*Milk in Meals* Cream Soup Puddings Hot Chocolate Toast Strips	Use of different forms of milk in food preparation: vanilla pudding, cream soup, hot milk drinks Variety of uses for simple puddings Different types of thickening agents: egg, flour, cornstarch	None	Student 1: Prepare soup. Student 2: Prepare pudding. Student 3: Prepare drinks. Student 4: Prepare toast strips; set table. (Other groups may choose different flavors of soup, pudding, and drinks.)

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENT TASKS
Cheese in the Diet	1. Determine the nutritive value of cheese. 2. Distinguish among types of cheeses. 3. Discuss cooking techniques and uses in the diet.	*Cheese Tasting Event* Variety of Cheeses: Cheddar, Gouda or Edam, Swiss, Mozzarella, etc. Crackers	Cheese cookery: cheese sauce - show techniques of cooking and various uses.	None	None
Meat Substitutes	1. Determine nutritive contribution of meat substitutes. 2. Value meals without meats. 3. Prepare cream sauce. 4. Review principles of protein cookery. 5. Prepare tea properly. 6. Use principles of pasta cookery.	*Meatless Meals* Macaroni and Cheese OR Creamed Eggs on Toast Salad of Choice Hot Tea	Brewing tea Making cream sauce Preparing pasta	None	Students 1 and 2: Prepare macaroni and cheese. Students 3 and 4: Prepare salad and tea.
Protein in Breakfast Meals	1. Use various sources of protein in breakfast meals. 2. Use skills in preparing eggs, cereals, and meats for breakfast meals. 3. Practice acceptable table manners.	*Breakfast* Fruit Cup Eggs/Omelette Sausage/Bacon Toast, Butter Coffee	Egg cookery Variety in breakfast (supplementary protein such as cereal with milk cheese, etc.) Cooked cereals	None	Student 1: Prepare meat. Student 2: Cook eggs. Student 3: Prepare fruit cup. Student 4: Prepare toast and coffee.
Meat in Meals	1. Determine nutritive value of meat, fish, or poultry. 2. Use meat cooking skills. 3. Distinguish between high and low fat forms of meats.	*Simple Family Meals* Broiled or Baked Chicken Steamed Vegetable Convenience Bread Iced Tea	Broiling Braising Roasting	None	Students 1 and 2: Prepare chicken. Students 3 and 4: Prepare vegetable and tea.
Low Income Meals	1. Prepare nutritious low cost meal. 2. Rate acceptability of meal. 3. Review table setting rules for Family Service. 4. Use principles of time management.	*Low Cost Meals* Tuna/Rice Casserole Green Beans Coleslaw Quick Bread Fruit in Season Iced Tea	None	None	Student 1: Cook casserole; set table. Student 2: Make bread. Student 3: Prepare coleslaw. Student 4: Prepare beans and fruit.

MAJOR CONCEPT	COMPETENCIES	LABORATORY	TEACHER DEMONSTRATIONS	PRE-LAB WORK	STUDENTS TASKS
*Quick Breads	1. Determine contributions of breads to the diet. 2. Use preparation skills to prepare batters and doughs. 3. Compare time, cost, and palatability for different types of quick breads. 4. Identify characteristics of standard product.	*Quick Breads* Muffins Biscuits Butter/Jelly Water	Prepare breads from both batters and doughs.	None	Students 1 and 2: Prepare one-half recipe of biscuits/muffins. Students 3 and 4: Same
Yeast Breads	1. Develop skills in preparing yeast bread. 2. Review variations in the preparation of yeast bread. 3. Review the contribution of breads to the diet. 4. Identify the characteristics of standard yeast breads.	*Yeast Breads* Yeast Bread Butter Spiced Tea	Yeast breads (A second demonstration may show variations.)	Prepare dough.	Students 1 and 2: Prepare one-half recipe of yeast bread. Students 3 and 4: Same
Cake Baking	1. Compare various methods for preparing cakes. 2. Develop skills in conventional cake-making techniques. 3. Determine the nutritive value of cakes. 4. Consider the differences in caloric value of various icings and toppings.	*Cake Baking* Butter Cake Milk Drink	Conventional cake preparation (Demonstrate sponge cakes at conclusion of butter cake lab.) Icing a cake	Bake cake with each two students preparing one layer.	All four students ice cake.

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*May be divided into two laboratory experiences.

SUGGESTIONS FOR PLANNING FOOD AND NUTRITION LABORATORIES

1. The instruction which students receive in the Food and Nutrition course may be the only formal education they will ever have in foods and nutrition. Plan for *essential* learning experiences.

2. Instruction in nutrition should be a part of each experience planned for Food and Nutrition classes. Laboratory experiences should be used to build nutrition concepts and food preparation and management skills. These experiences should be interspersed throughout the course. The teacher should avoid separation of instruction in nutrition from that of food preparation.

3. Priorities for necessary principles which must be taught should be set before laboratories are planned.

4. Each laboratory experience should be evaluated in terms of basic behavioral objectives which will be reached *for each student* who participates. For example, if four students are in a group and only one has the experience of kneading dough, then only one student will develop the skill of preparing dough properly. The other students missed the experience. Can a teacher afford to teach skills to only one-fourth of the students?

5. Students who enter a Food and Nutrition class are *very* anxious to cook. Capitalize on that motivation! However, there are many interesting and exciting experiences with foods which do not involve cooking. Be enthusiastic about those as well. Nutrition concepts should be an integral part of every laboratory experience.

6. Integrate concepts which require short periods for development as multiple activities in the laboratory. For example, teach table manners along with vegetable cookery, safety along with meat cookery, etc.

7. Each member of a "laboratory family" should have some food preparation responsibility during each laboratory experience.

8. In deciding whether each "laboratory family" is to prepare the same product in a laboratory experience, be guided by the objectives for the class. If the objectives are to develop a specific principle, then each must prepare the same type of food; if the objective is to see variety available within a certain category, then different laboratory units may prepare different foods. For example, if one skill to be acquired is proper handling and preparation of salad greens, then each student group must prepare a green salad. If, on the other hand, the objective is to see *variety in salads,* then each group may prepare a different type of salad, i.e., tossed, gelatin, meat, etc.

9. In selecting food experiences, select those which *build basic* skills and competencies. For example, instead of using a laboratory on "Angel Biscuits" (a combination quick-yeast bread), students should master both quick breads and yeast breads.

10. Demonstrate a food preparation technique before each laboratory experience. Remember, if students already know how to prepare a food, it should not be used as a lab experience. If students do not have the skill, a demonstration will better ensure their acquiring the skill.

11. Follow a demonstration with individual student experiences. These do not have to be laboratory experiences, although they may be.

12. When giving a demonstration, provide each student with a copy of the instructions used.

13. In order to have essential information available for multiple lessons, post for the entire semester a calorie chart and a copy of the Daily Food Guide.

14. Collect food containers of all possible types of food (cans, boxes, jars, bottles, labeled sacks, etc.). Use in exhibits suggested for developing many concepts.

15. Food models are strongly recommended for use in a variety of exhibits and learning experiences. These are available in cardboard models or in more expensive food facsimiles.

16. The teacher with a limited budget may include valuable experiences by practicing some of the following suggestions:
    a. Have students prepare exhibits using food models instead of preparing actual foods to show nutrition concepts.
    b. Use low cost foods when possible. For example, cabbage slaw instead of tossed green salad, green beans instead of broccoli, meat patties instead of pork chops, plain cake instead of chocolate cake.
    c. Demonstrate food preparation skills instead of having laboratories.
    d. Have tasting events instead of food preparation laboratories.
    e. Limit the number of laboratory experiences to those needed for developing *only* the *basic* food and nutrition concepts.

17. Planning prior to the beginning of the course is absolutely essential for effective use of resources, i.e., time, money, etc.

18. The major learning from laboratory experiences may well be the experiences which follow the laboratory. For example, after an experience of preparing a meal of convenience foods, the teacher should follow with activities similar to the following:
    a. Show the contributions the foods make toward the daily nutritional needs of an average teenager.
    b. Make a chart showing differences in cost, time, and energy of the convenience foods as compared to conventional foods.
    c. Make recommendations for ways in which convenience foods may be included in a family's regular meal patterns.

    Evaluations which follow laboratory experiences should be much broader than just checking for *quality* of product and *efficiency* in preparation.

TRANSPARENCIES AND REFERENCES

T-1

Nutrition News Articles
RELIABLE AND UNRELIABLE

Nutrition Study Results Revealed

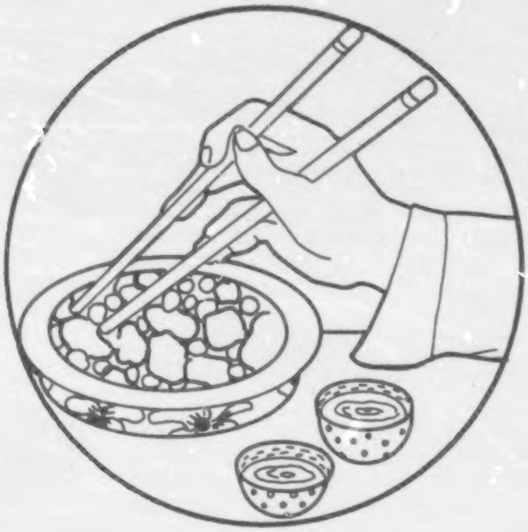
DALLAS - DR. JOAN SMITH ANNOUNCED FINDINGS OF A RECENT RESEARCH STUDY LAST NIGHT AT A MEETING OF THE TEXAS NUTRITION BOARD. DR. SMITH, A PROFESSOR AT TEXAS STATE COLLEGE, STUDIED EATING HABITS OF 200 COLLEGE FRESHMEN BETWEEN SEPTEMBER 1982 AND MAY 1983. THE RESEARCH WAS TO DETERMINE IF A RELATIONSHIP BETWEEN FOOD HABITS AND ACADEMIC ACHIEVEMENT EXISTS. RESULTS WERE INCONCLUSIVE. HOWEVER, SEVERAL TRENDS WERE NOTED..................

Hollywood Stars Endorse Vitamins

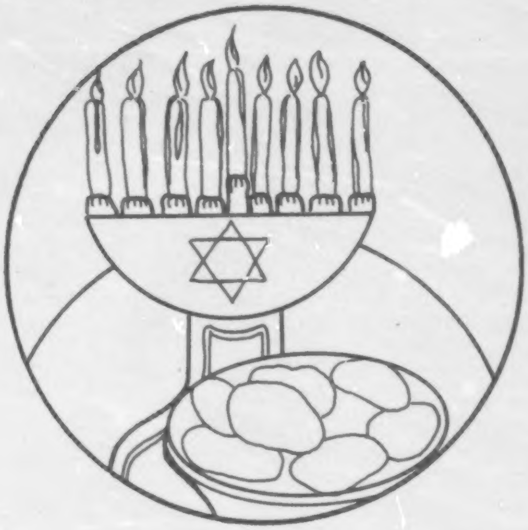
HOLLYWOOD - TEN FAMOUS HOLLYWOOD STARS CLAIMED TODAY THAT THEIR SUCCESS IS DUE TO ATLAS VITAMINS. THESE FABULOUS PILLS WILL GUARANTEE YOUR SUCCESS IF TAKEN WITH ALL MEALS. YOU WILL LOOK AND FEEL 10 YEARS YOUNGER AND 10 TIMES STRONGER. BE SURE TO START TAKING YOUR ATLAS VITAMINS TODAY.

Factors Influencing Food Habits and Customs

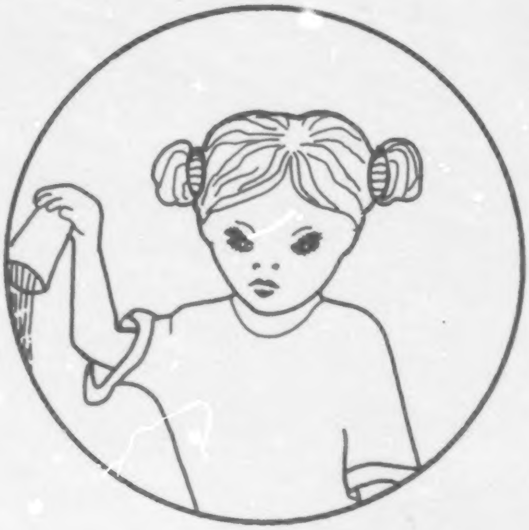
Culture



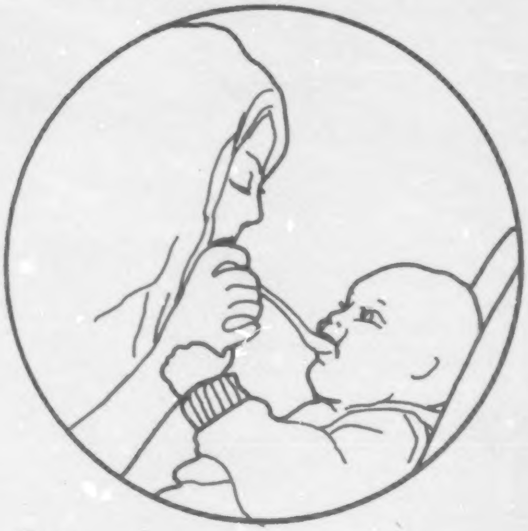
Religion



Emotions



Conditioning



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T-3

Food Preparation Schedule

MENU:

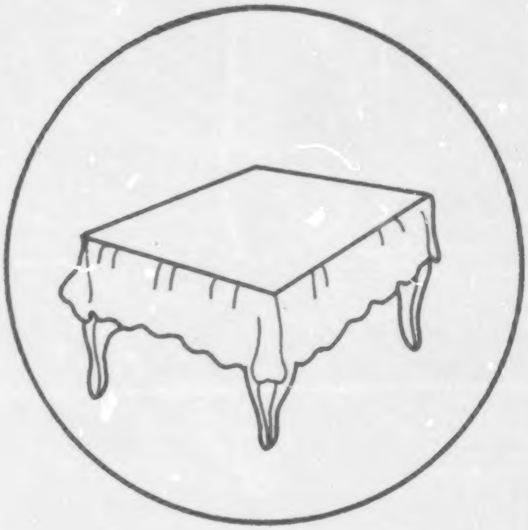
Salad (Tomato, Cucumber, Lettuce)
Cheese Souffle
Green Beans
French Garlic Bread
Peaches and Cream
Iced Tea

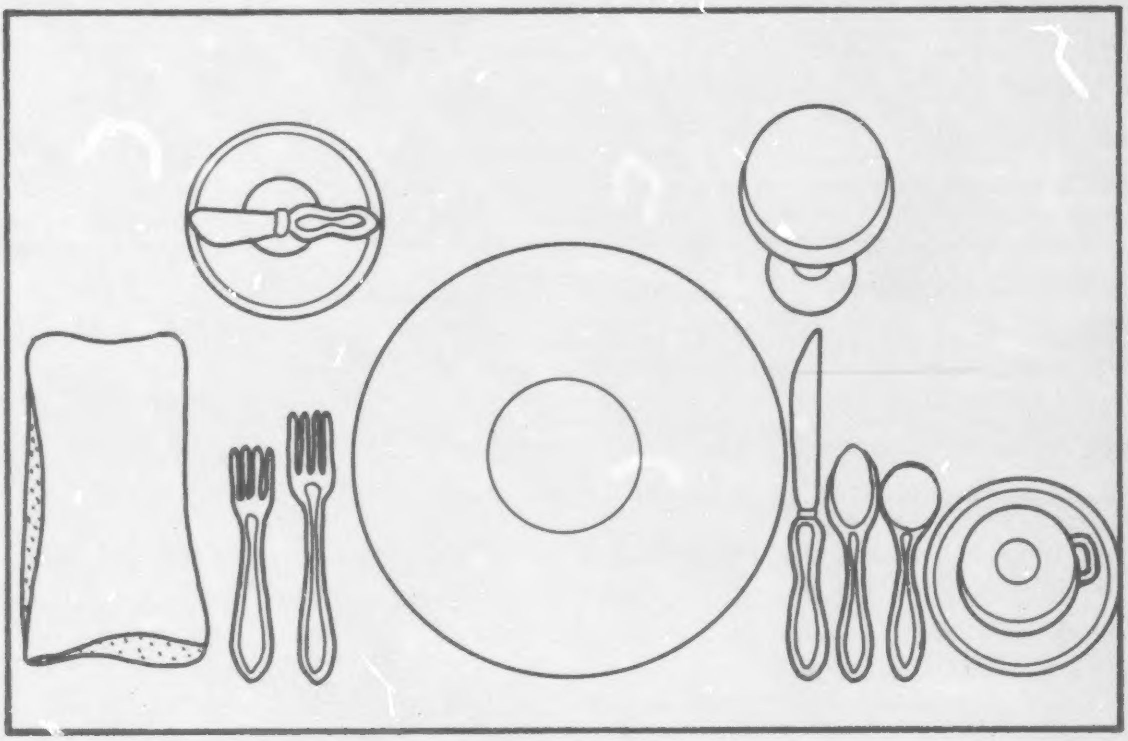
TIME SCHEDULE:

5:30 p.m.	Assemble ingredients for cheese souffle. Preheat oven to 350°.
5:40 p.m.	Mix ingredients for souffle.
5:55 p.m.	Put souffle in oven. Heat water for iced tea. Prepare tomatos, cucumber, and lettuce for salad. Put in bowls.
6:10 p.m.	Remove water from heat and make tea; set aside to cool. Set table.
6:20 p.m.	Assemble serving dishes and utensils for souffle, beans, and bread. Mix garlic paste or salt with butter. Cut French bread and butter; wrap in foil.
6:30 p.m.	Peel and slice peaches into dessert dishes, sprinkle with lemon juice and place dishes in refrigerator. Whip cream, adding desired flavoring and sugar. Cover bowl and place in refrigerator.
6:45 p.m.	Put beans on stove to heat. Put garlic bread in oven to heat.
6:50 p.m.	Put ice in glasses and pour tea.
6:55 p.m.	Remove souffle and bread from oven. Place souffle, bread, beans, and salad on table.
7:00 p.m.	Serve dinner.
7:20 p.m.	Remove peaches and whipped cream from refrigerator. Place cream on each dish of peaches and serve dessert.

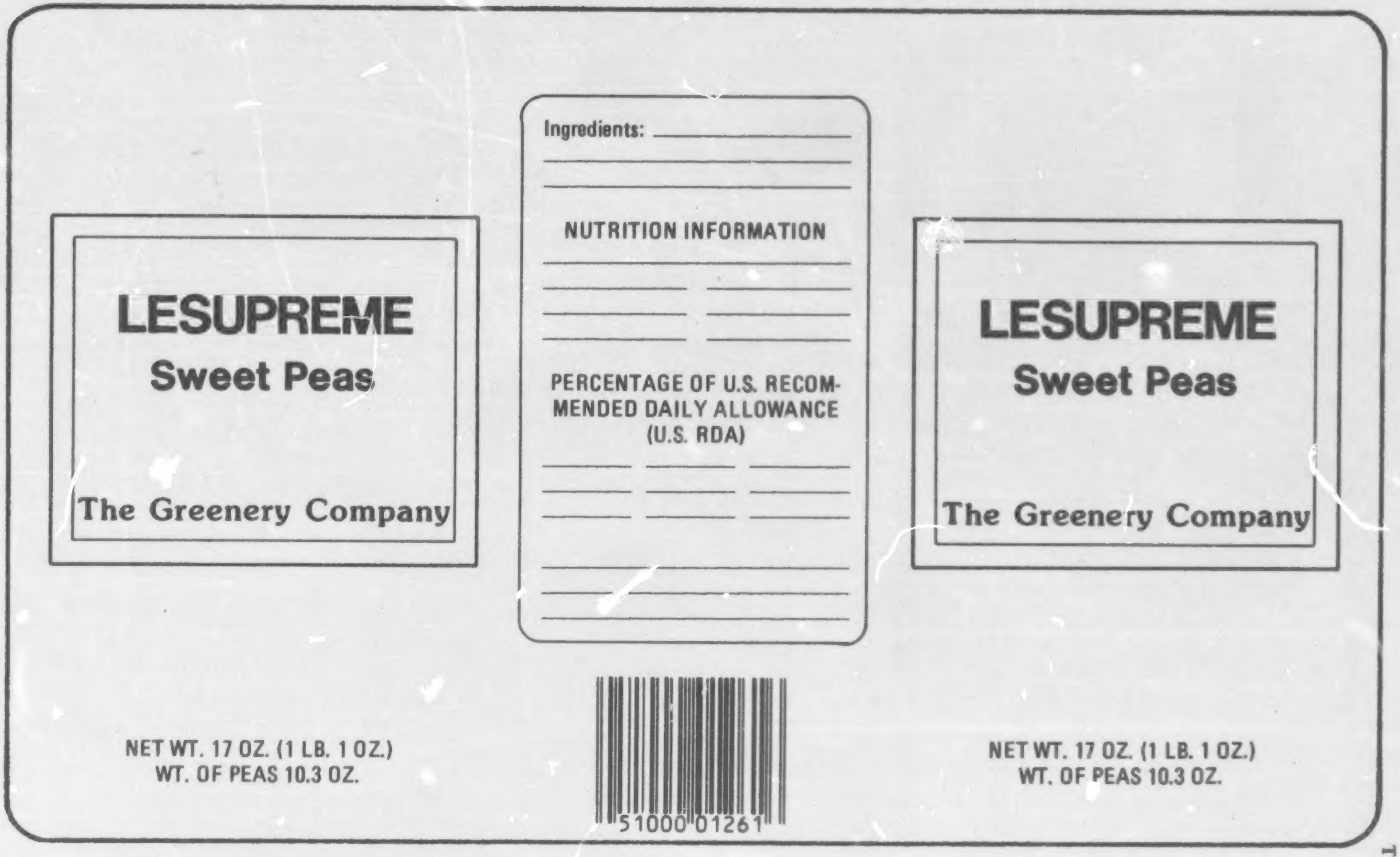
T-4

Basic Table Setting





Food Labels



LESUPREME
Sweet Peas

The Greenery Company

NET WT. 17 OZ. (1 LB. 1 OZ.)
WT. OF PEAS 10.3 OZ.

Ingredients: ______

NUTRITION INFORMATION

PERCENTAGE OF U.S. RECOMMENDED DAILY ALLOWANCE (U.S. RDA)

51000 01261

LESUPREME
Sweet Peas

The Greenery Company

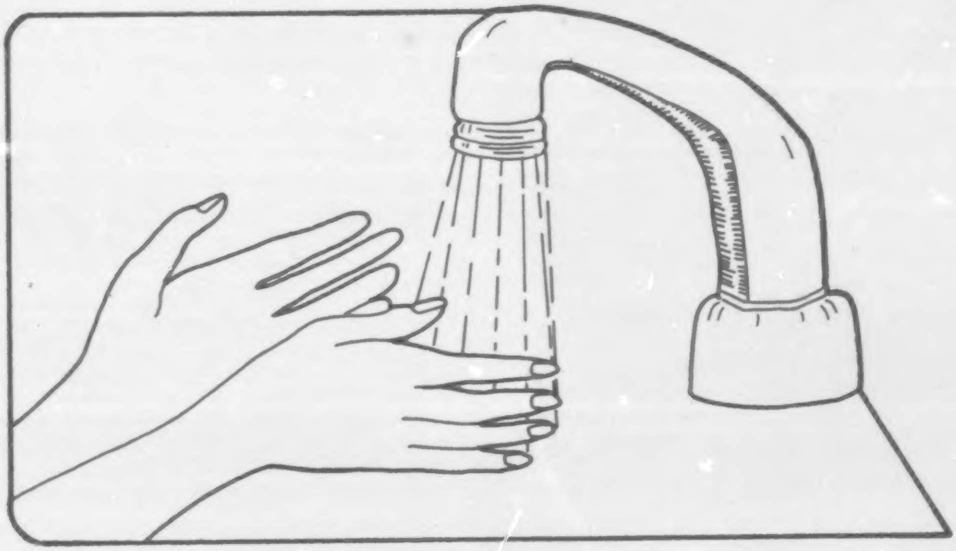
NET WT. 17 OZ. (1 LB. 1 OZ.)
WT. OF PEAS 10.3 OZ.

Hand Sanitation

Wash Hands

Before: Starting to work
Eating

After: Visiting restroom
Coughing or sneezing



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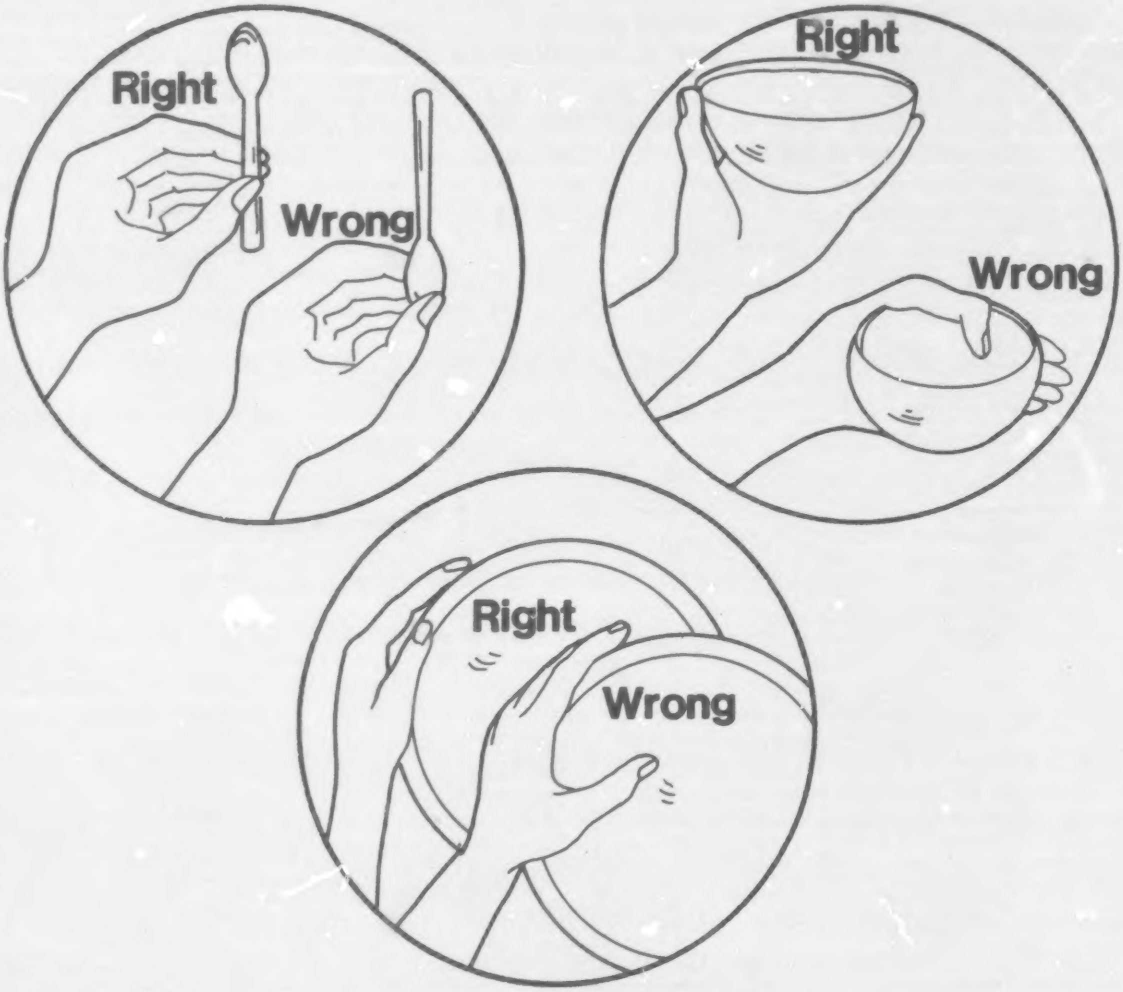
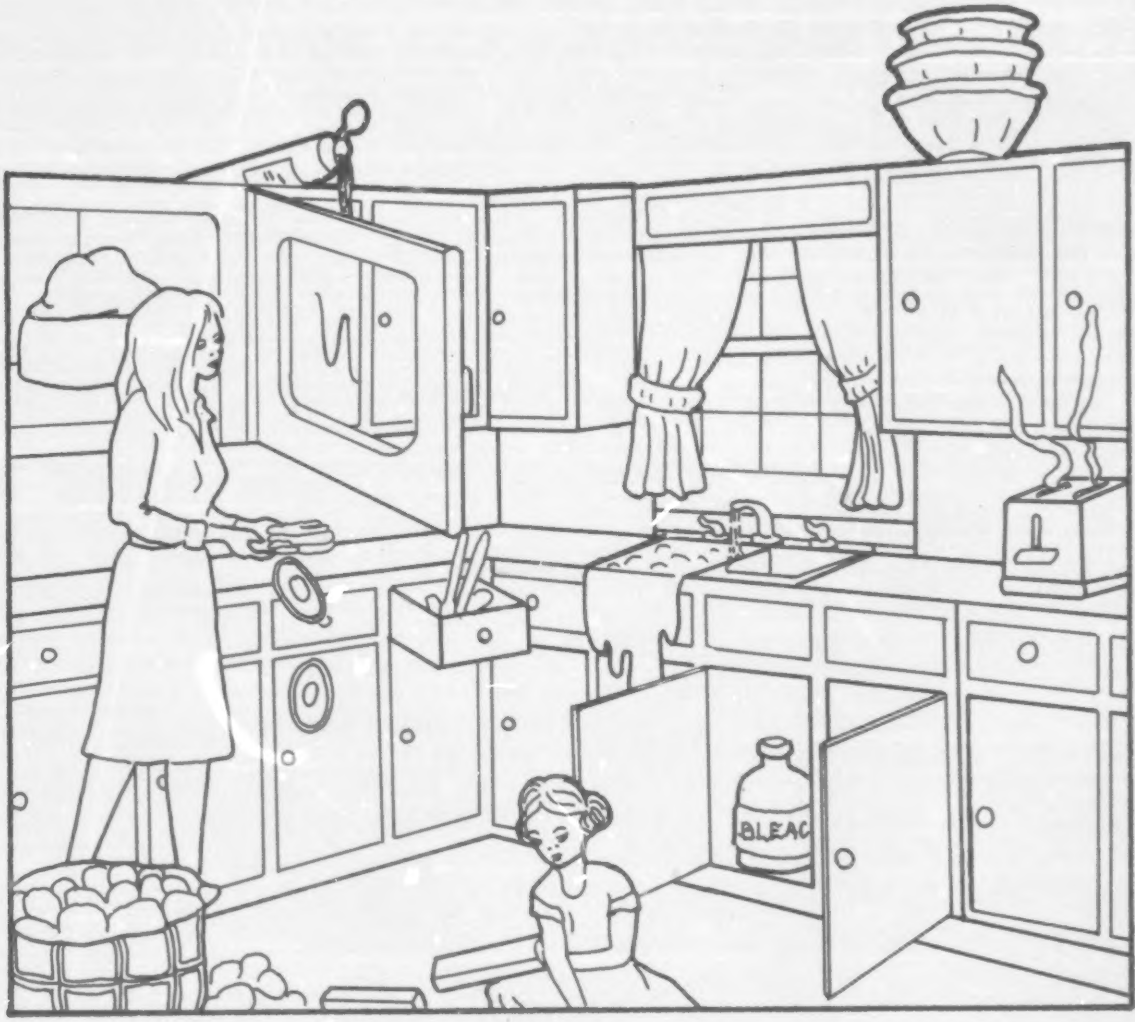
T-7

Handling Clean Dishes


Right
Wrong
Right
Wrong
Right
Wrong

Safety Hazards in the Kitchen

How Many Kitchen Safety Hazards Can You Identify?



T-9

Sample Recipe

Broccoli and Chicken Casserole

3 cups	diced, cooked chicken
2-10 ounce packages	frozen, chopped broccoli
1 can	cream of chicken soup
½ cup	sour cream
½ cup	mayonnaise
½ cup	grated cheddar cheese
½ teaspoon	curry powder
2 Tablespoons	lemon juice
½ cup	grated Parmesan cheese

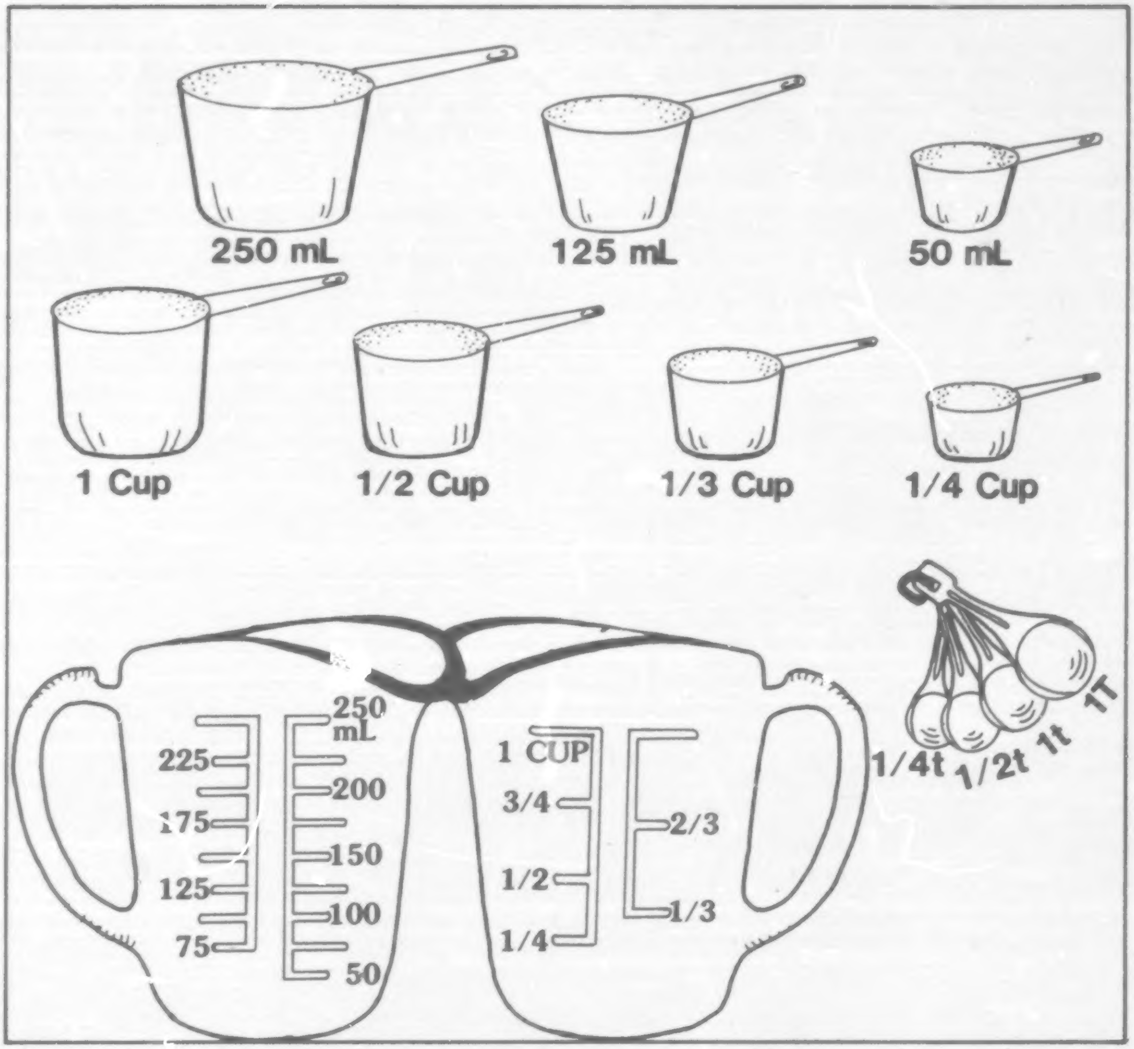
Cook frozen broccoli according to directions on package. Arrange cooked broccoli in 10" X 13" greased casserole dish. Combine the remaining ingredients, except the Parmesan cheese, stirring until well mixed. Pour half of mixture over broccoli. Add diced, cooked chicken on top of the broccoli and mixture. Pour remaining half of mixture over chicken. Sprinkle Parmesan cheese on top. Bake in oven at 350° about 25-30 minutes, or until it bubbles in the middle. Makes 6-8 servings.

General Directions For Writing Recipes

1. Capitalize first letters in the title.
2. Do not capitalize ingredients except proper names.
3. Use figures for fractions.
4. Do not use abbreviations for amounts or instuctions.

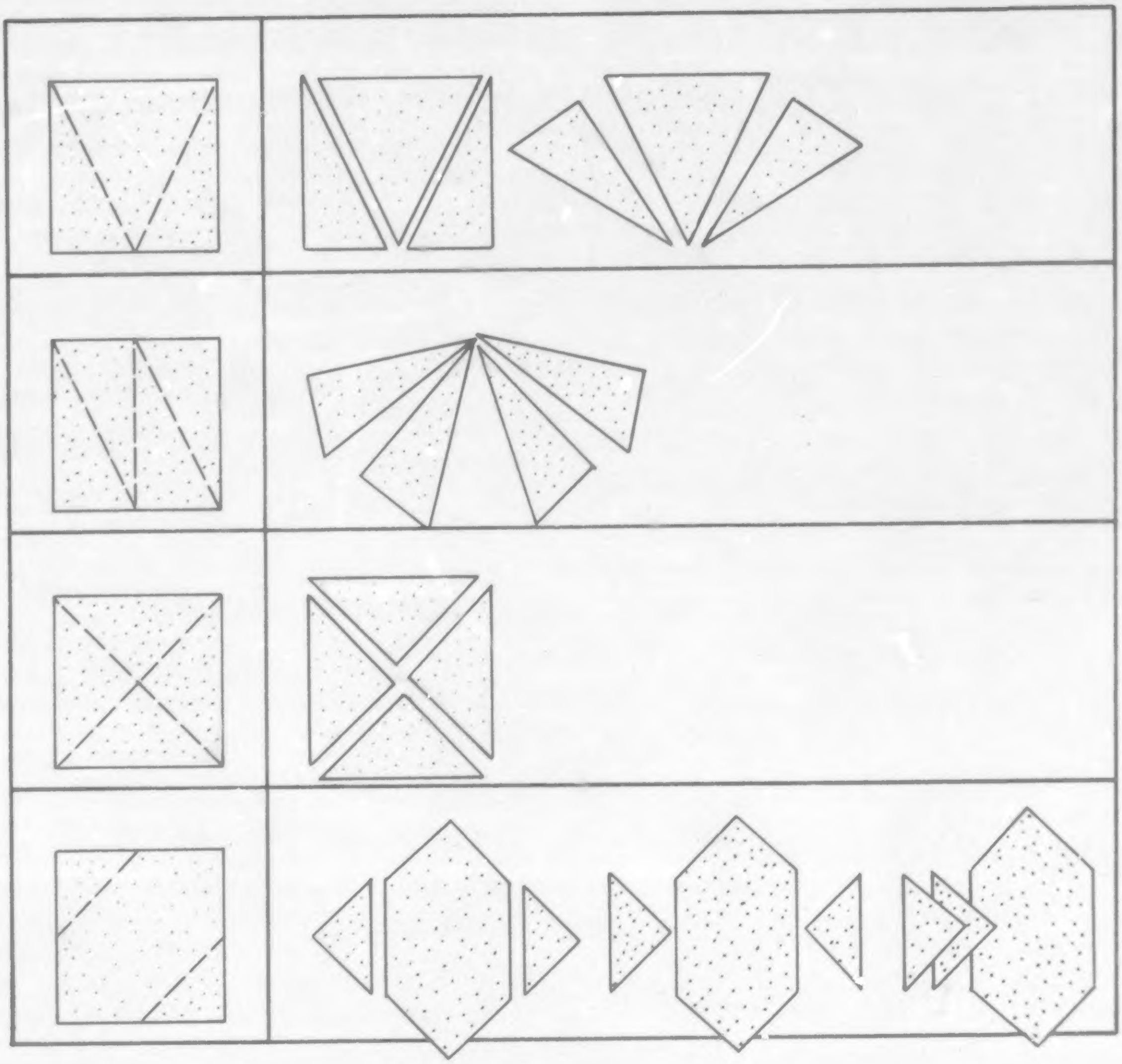
T-10

U.S. Standard Measurements and Metric Measurements

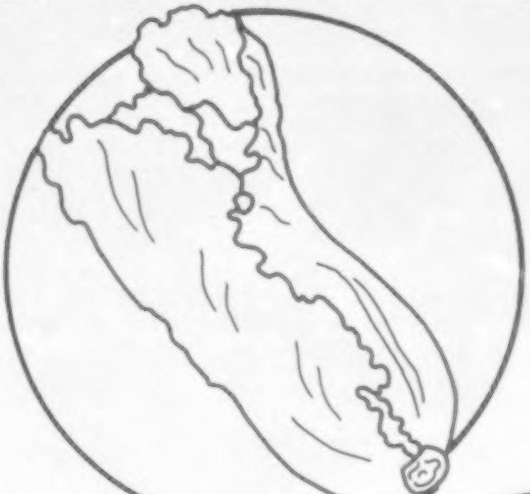

250 mL
125 mL
50 mL
1 Cup
1/2 Cup
1/3 Cup
1/4 Cup
250 mL
225
200
175
150
125
100
75
50
1 CUP
3/4
2/3
1/2
1/3
1/4
1/4t
1/2t
1t
1T

T-11

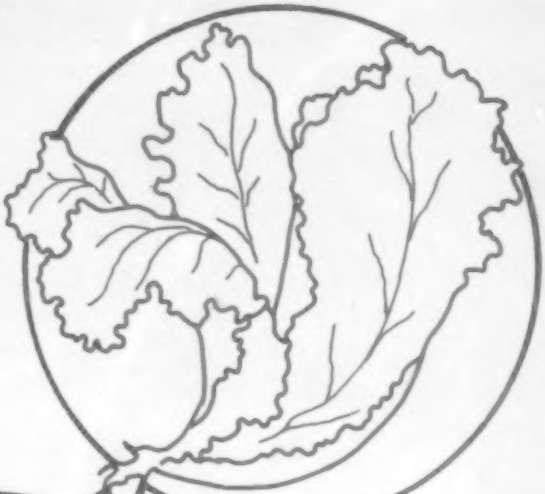
Cutting Sandwiches



Various Types of Salad Greens

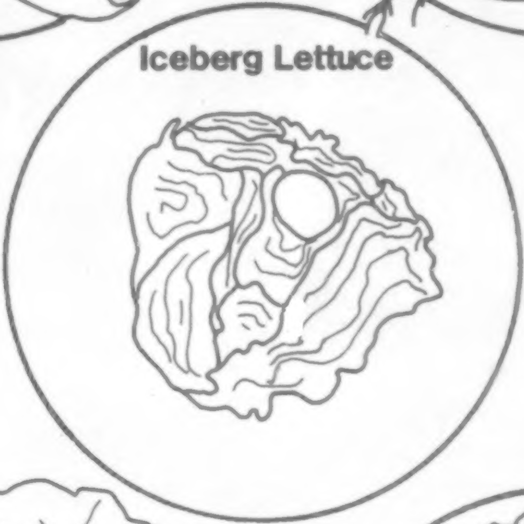


Romaine Lettuce

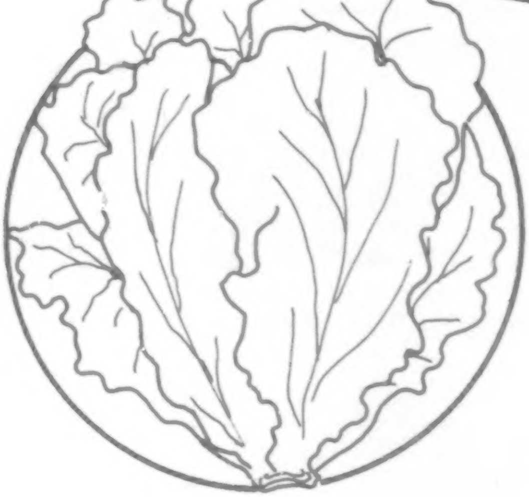


Leaf Lettuce

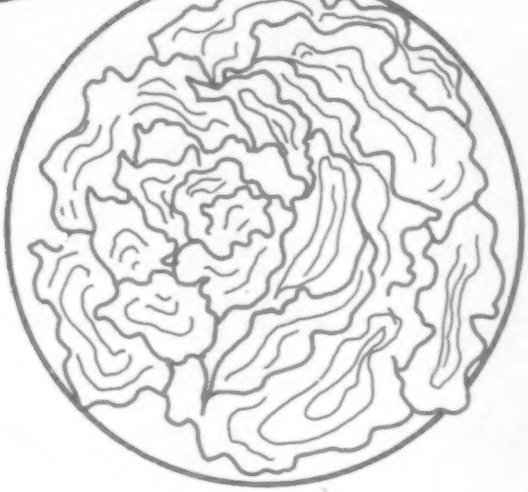
Iceberg Lettuce



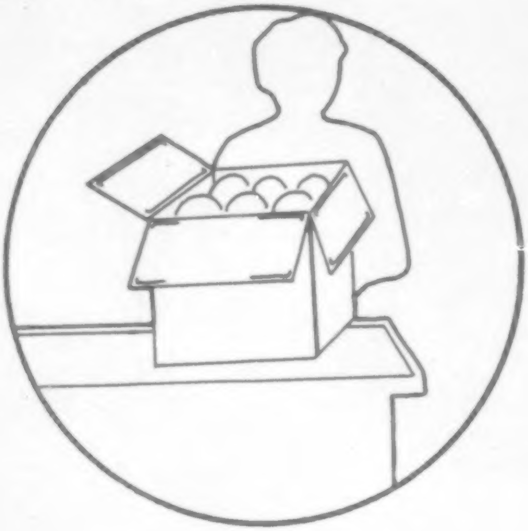
Escarole Lettuce



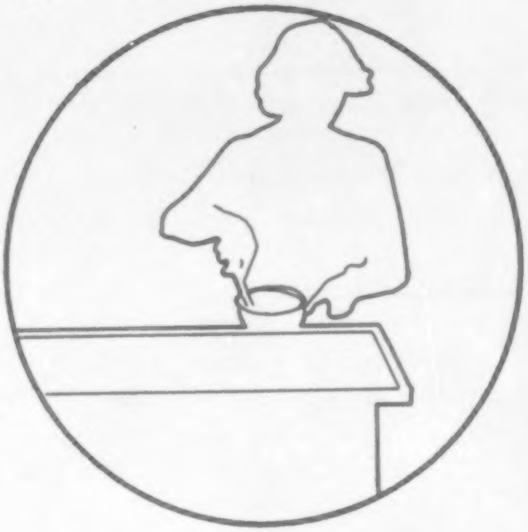
Boston Lettuce



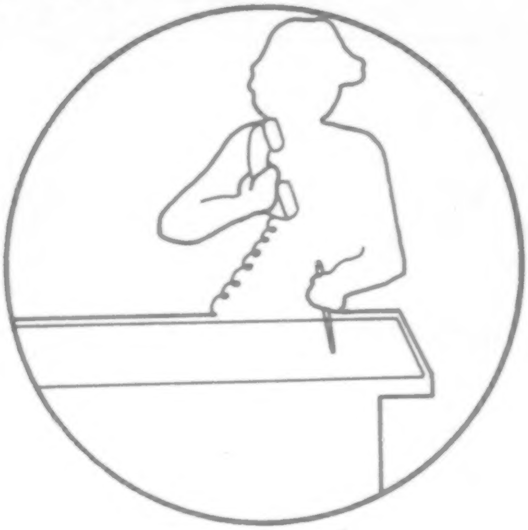
Career Awareness



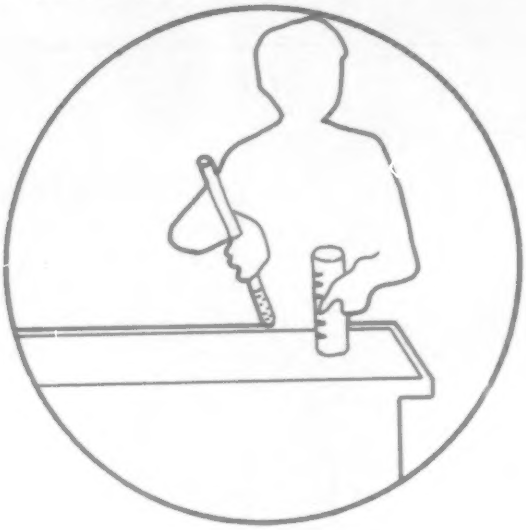
Grocery Clerk



Demonstrator

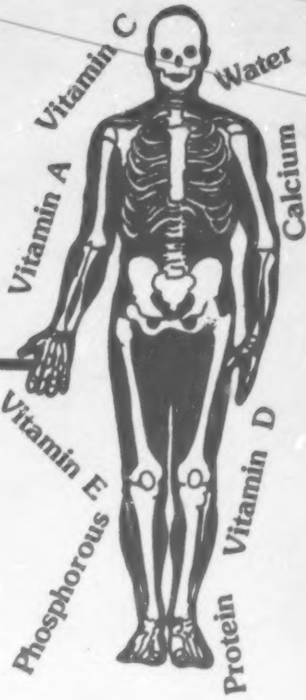


Hospital Dietitian



Food Researcher

Functions of Nutrients


Vitamin C
Water
Vitamin A
Calcium
Vitamin E
Vitamin D
Phosphorous
Protein

Water Carries nutrients to body cells.

Protein Promotes growth; builds cells, tissues, muscles, and bones.

Carbohydrates Provide energy.

Fats Provide energy and carries fat-soluble vitamins.

Calcium Builds strong bones and teeth.

Phosphorous Helps calcium work.

Vitamin D Needed for using calcium and phosphorous.

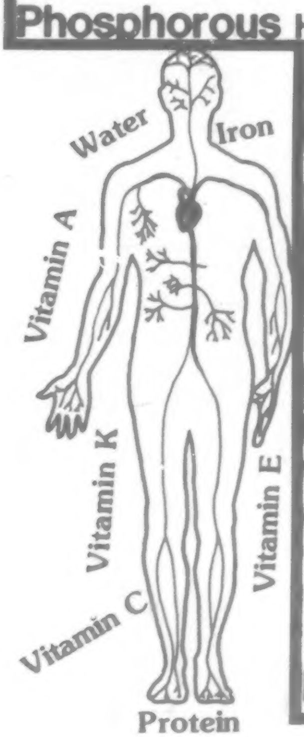
Vitamin C Aids in healing wounds; builds healthy bones, teeth, blood vessels, and other tissues.

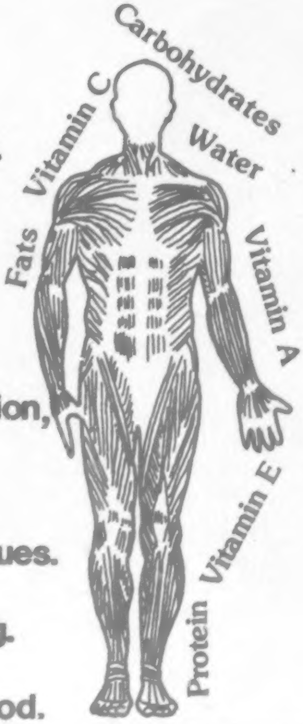
Vitamin A Promotes good vision, healthy skin, strong bones, and aids in healing wounds.

Vitamin E Preserves cell tissues.

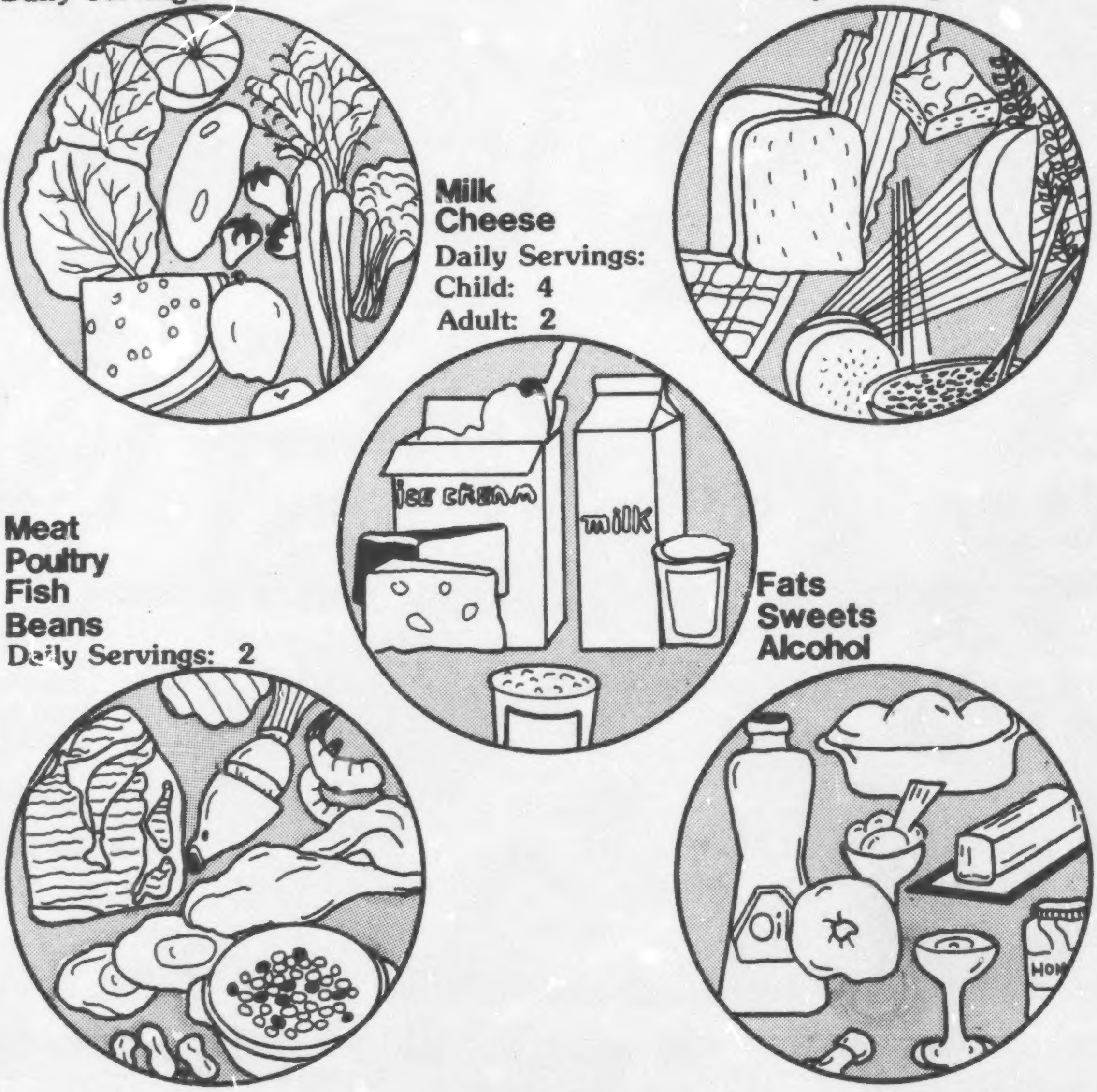
Vitamin K Helps blood clotting.

Iron Carries oxygen to the blood.


Water
Iron
Vitamin A
Vitamin K
Vitamin E
Vitamin C
Protein


Carbohydrates
Vitamin C
Water
Fats
Vitamin A
Vitamin E
Protein

Five Food Groups
Daily Food Guide



Vegetables
Fruit
Daily Servings: 4

Bread
Cereal
Daily Servings: 4

Milk
Cheese
Daily Servings:
Child: 4
Adult: 2

Meat
Poultry
Fish
Beans
Daily Servings: 2

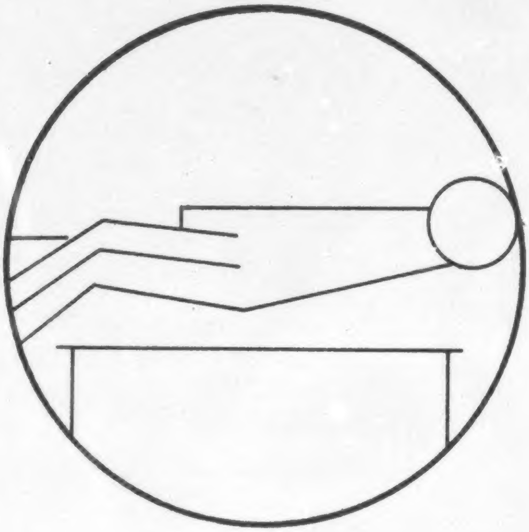
Fats
Sweets
Alcohol

T-16

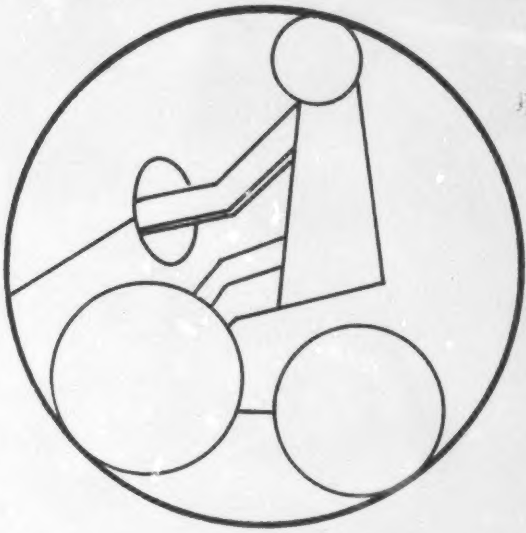
Calorie Expenditure

Approximate Energy Expenditure by a 150 Pound Person in Various Activities

Activity	Calories per hour
Lying down or sleeping	80



Activity	Calories per Hour
Driving an automobile	120



Activity	Calories per hour
Swimming , 1/4 mph	300

Activity	Calories per hour
Running, 10mph	900

T-17a

Weight Control

1 Pound FAT = 3500 Calories =

	Calories	
Activity	Per Minute	Per Hour
WALKING (3MPH)	3.5	210
RUNNING (10 MPH)	15	900
BICYCLING (5 MPH)	3.5	210
DANCING	5-7	300
SWIMMING	5-10	300
TENNIS	7-10	420

To Lose 1 Pound Fat =

***(Proper Weight X 15)**
Minus 500 CaL

Equal No. of CaL to Eat
per Day for 1 Week

or

Increase Activity Level to Use 500 Extra Calories per Day

* IT TAKES 15 CALORIES TO THE POUND TO MAINTAIN WEIGHT; THEREFORE, PROPER WEIGHT X 15 = NO. OF CALORIES PER DAY TO MAINTAIN PROPER WEIGHT.

Weight Control

Desirable Weights for Men and Women
According to Height and Frame, Ages 25 and Over

WEIGHT IN POUNDS (In Indoor Clothing)*

HEIGHT (In Shoes)**	SMALL FRAME	MEDIUM FRAME	LARGE FRAME
MEN			
5' 2"	128-134	131-141	138-150
3"	130-136	133-143	140-153
4"	132-138	135-145	142-156
5"	134-140	137-148	144-160
6"	136-142	139-151	146-164
7"	138-145	142-154	149-168
8"	140-148	145-157	152-172
9"	142-151	148-160	155-176
10"	144-154	151-163	158-180
11"	146-157	154-166	161-184
6' 0"	149-160	157-170	164-188
1"	152-164	160-174	168-192
2"	155-168	164-178	172-197
3"	158-172	167-182	176-202
4"	162-176	171-187	181-207
WOMEN			
4' 10"	102-111	109-121	118-131
11"	103-113	111-123	120-134
5' 0"	104-115	113-126	122-137
1"	106-118	115-129	125-140
2"	108-121	118-132	128-143
3"	111-124	121-135	131-147
4"	114-127	124-138	134-151
5"	117-130	127-141	137-155
6"	120-133	130-144	140-159
7"	123-136	133-147	143-163
8"	126-139	136-150	146-167
9"	129-142	139-153	149-170
10"	132-145	142-156	152-173
11"	135-148	145-159	155-176
6' 0"	138-151	148-162	158-179

* Indoor clothing weighing five pounds for men and three pounds for women.

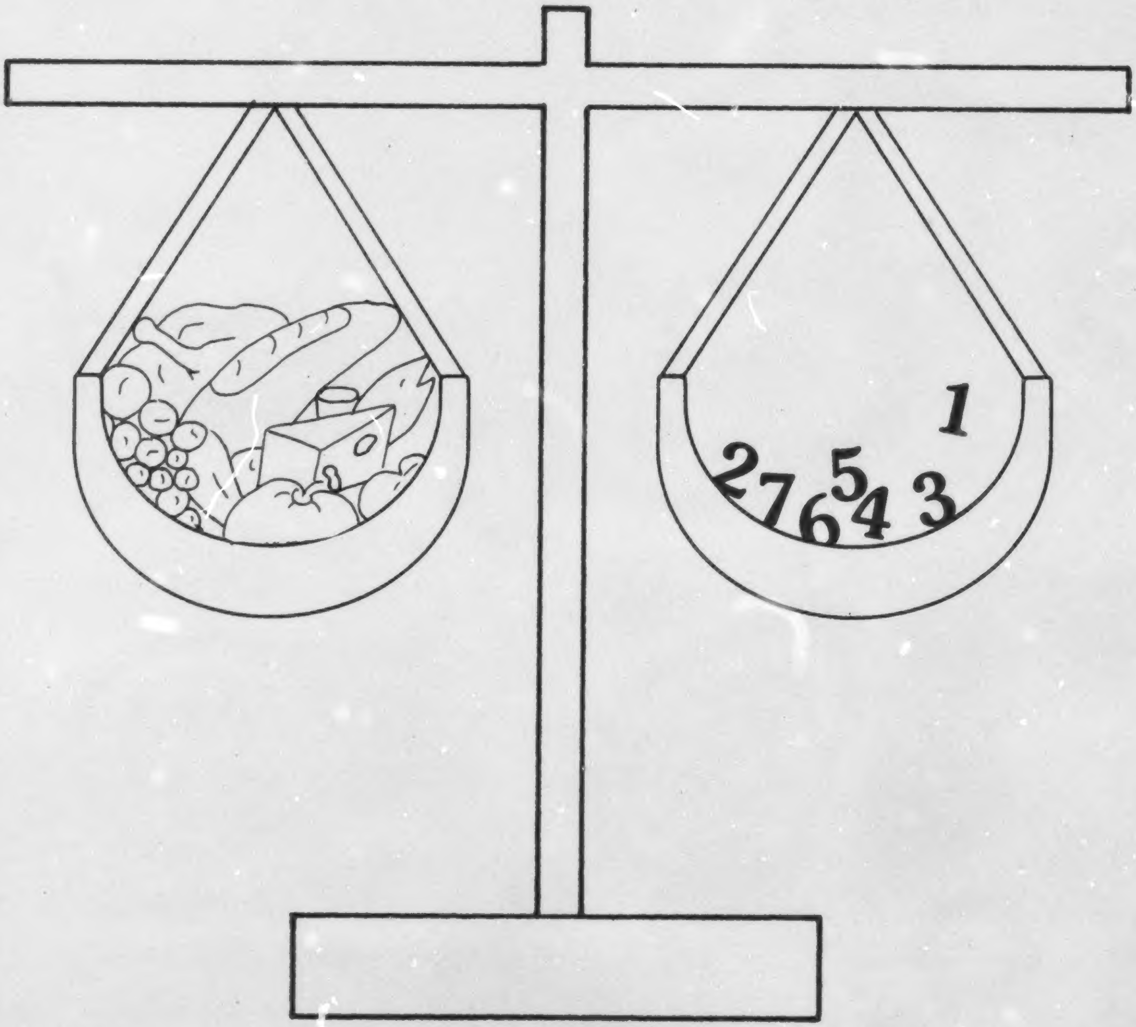
**1-inch heels for men and women.

Prepared by the Metropolitan Life Insurance Company. Basic data derived from 1979 Build Study, Society of Actuaries and the Association of Life Insurance Medical Directors of America, 1980.

T-18

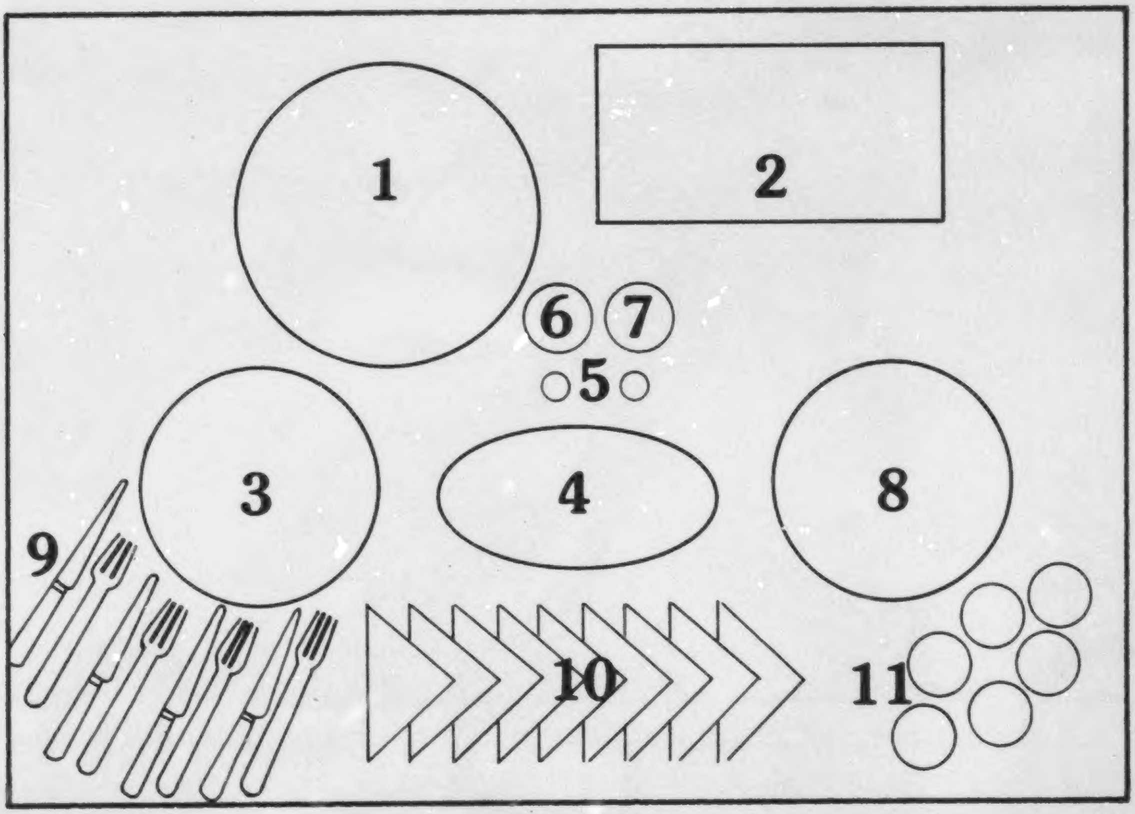
Dietary Guidelines

1. Eat a variety of foods.
2. Maintain ideal weight.
3. Avoid too much fat, saturated fat, and cholesterol.
4. Eat foods with adequate starch and fiber.
5. Avoid too much sugar.
6. Avoid too much sodium.
7. If you choose to drink do so in moderation.



Buffet Setting

1. Hamburger Serving Plater
2. Centerpiece
3. Plates
4. Relish Tray
5. Salt and Pepper
6. Mayonnaise
7. Mustard
8. Potato Salad Serving Bowl
9. Flatware
10. Napkins
11. Glasses



293

Universal Product Code and Cash Register Tape

SCANNERS READ THESE BARS AND TRANSLATE THEM SO THE REGISTER CAN RING UP THE ITEM AND THE PRICE.

This number identifies the product category. → 0

73410 05205

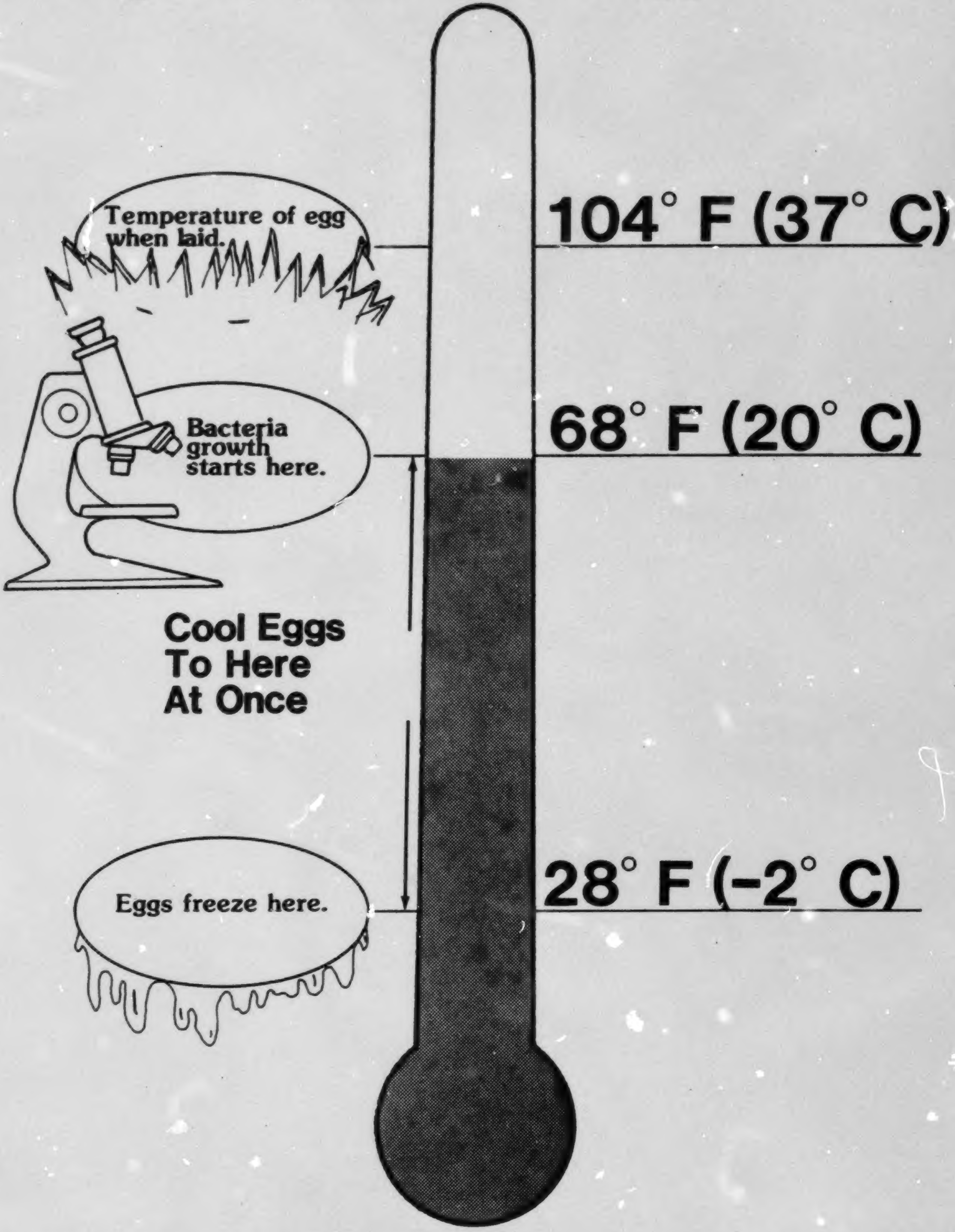
These numbers identify the product.

These numbers identify the manufacturer.

SUPREME SUPERMARKET	538
16. HNZ BBQ W-O	1.09
RUSSET POTATOES	1.05
2.69 LB AT .39/LB	
TOTAL	$2.14
CASH TND	$2.15
CHANGE DUE	$ .01

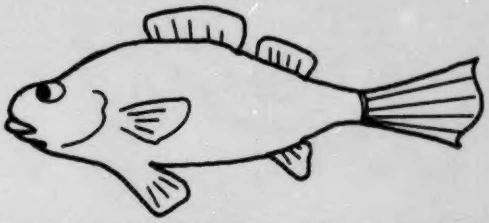
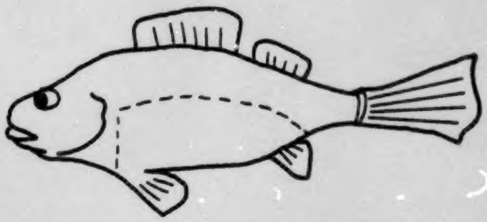
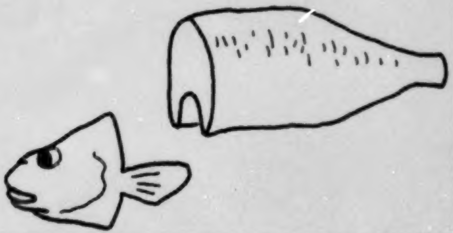
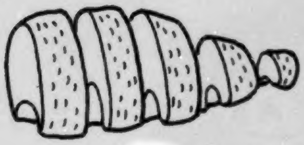
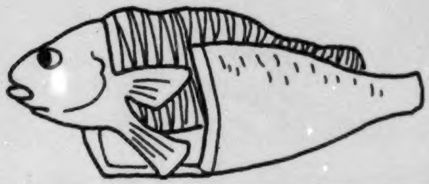
LAURIE 4 TS-21
10/11/81 11.42 43023
THANK YOU, COME AGAIN
DOUBLE STAMPS TODAY

Storage Temperatures for Eggs


Temperature of egg when laid.
104° F (37° C)
Bacteria growth starts here.
68° F (20° C)
Cool Eggs To Here At Once
Eggs freeze here.
28° F (-2° C)

T-22

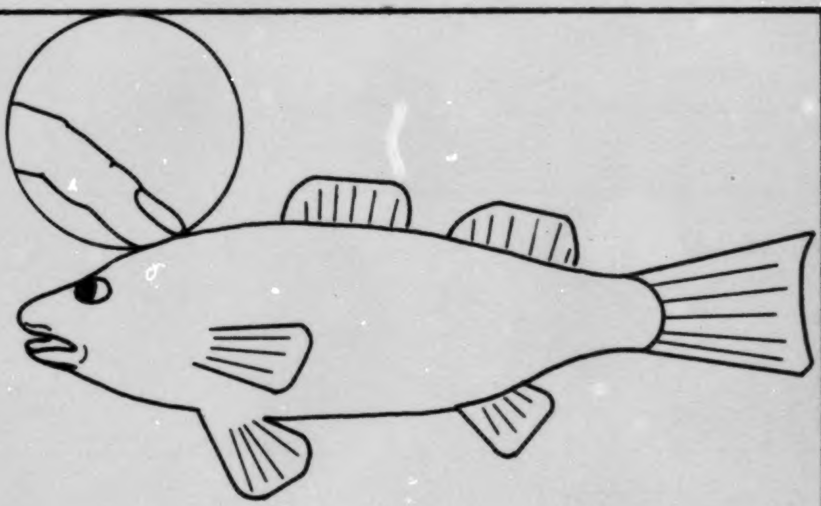
Ways to Purchase Fresh Fish

Form	Appearance
WHOLE	
DRAWN	
PAN-DRESSED	
STEAK	
FILLET OR FILET (FIL-LAY')	

Characteristics of Fresh Fish

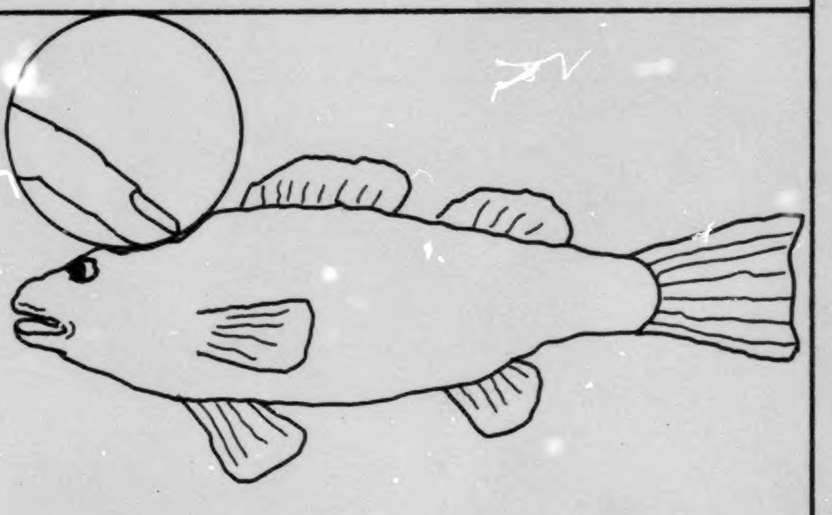
Fresh

Firm flesh
Bright eyes
Red gills
Mild odor



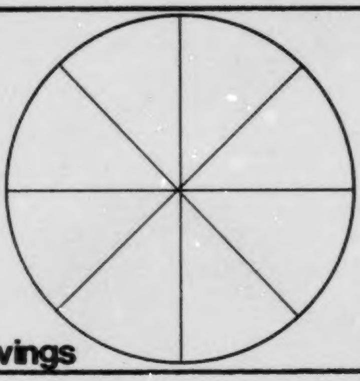
NOT Fresh

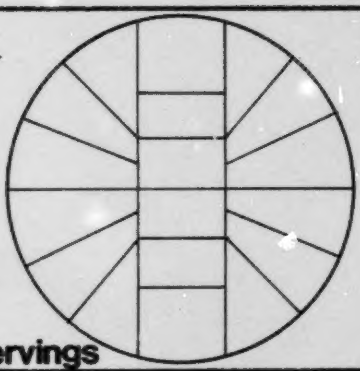
Spongy flesh
Dull, sunken eyes
Greyish gills
Strong odor

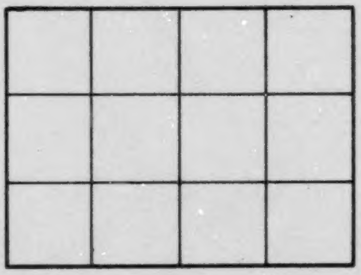


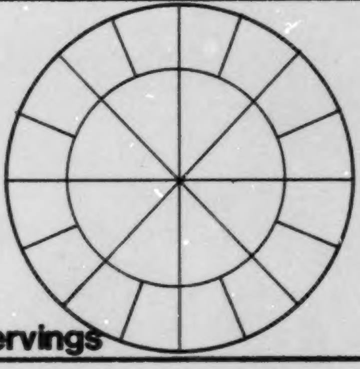
T-24

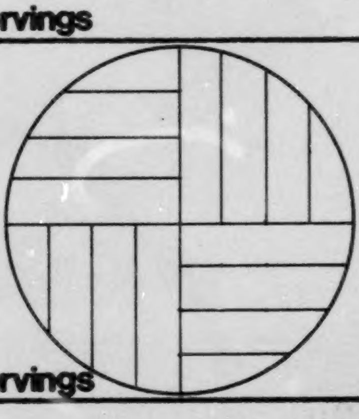
Ways to Cut Cakes

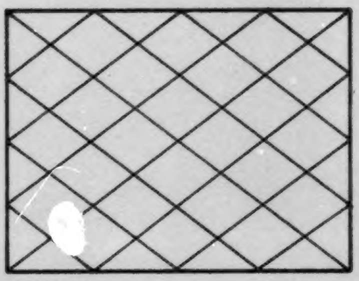

8 Servings


18 Servings

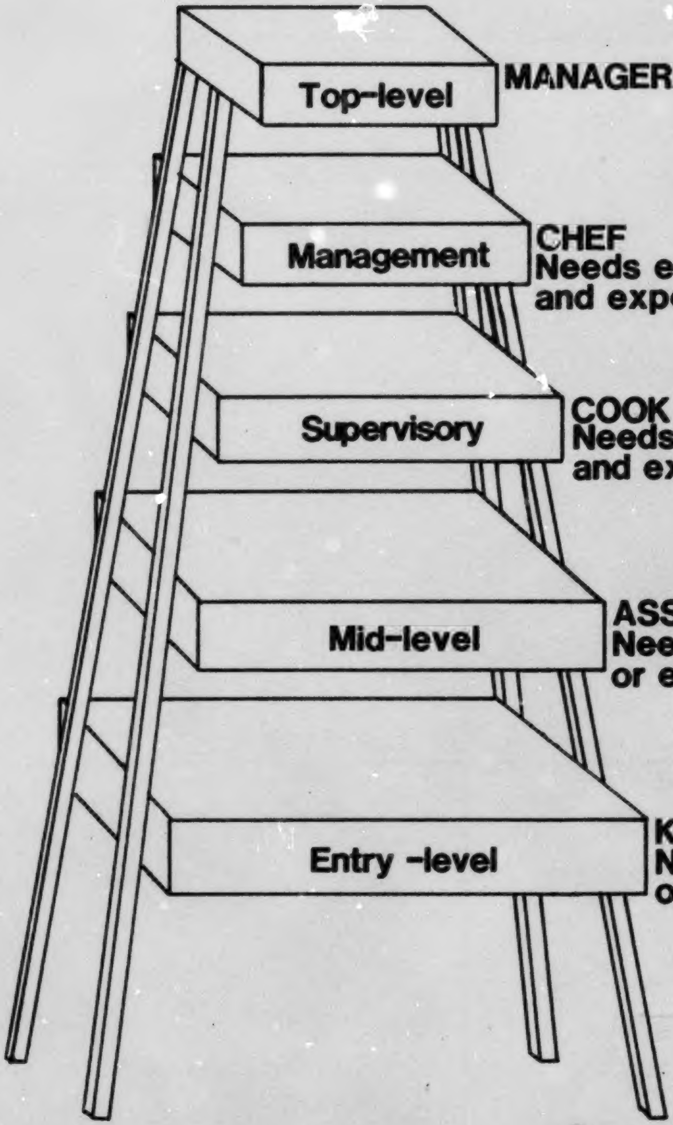

12 Servings


24 Servings


16 Servings


40 Servings

Career Ladder


Top-level
Management
Supervisory
Mid-level
Entry -level

MANAGER/OWNER

CHEF
Needs extensive training
and experience.

COOK
Needs training
and experience.

ASST. COOK
Needs training
or experience .

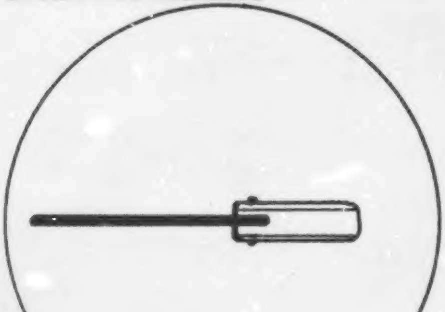
KITCHEN HELPER
Needs no training
or experience.

T-26

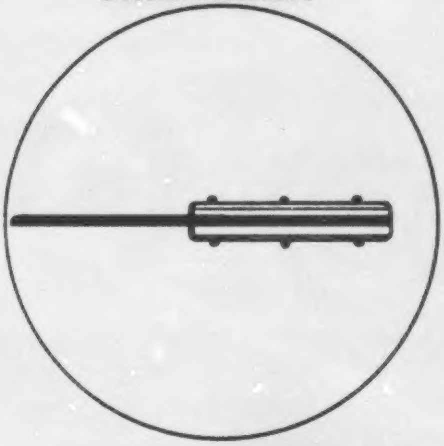
Knife Construction

Knife Handles

Tang short—
one brad
attaches handle

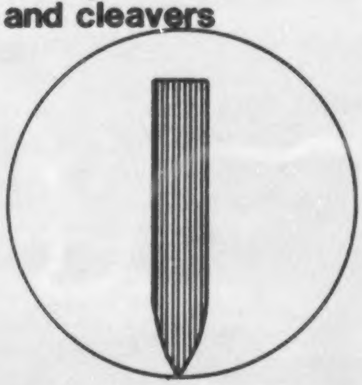


Tang full length—
three brads
attach handle

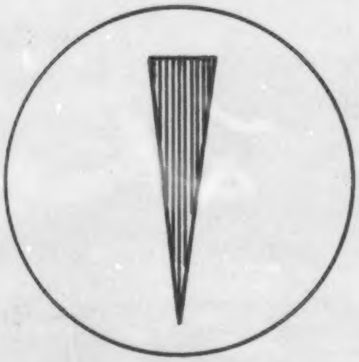


Knife Blades or Tangs

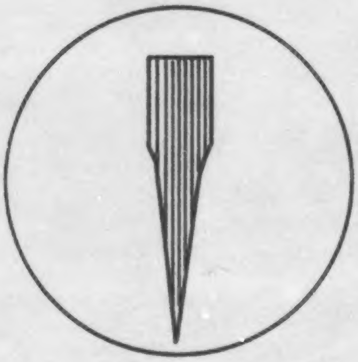
ROLL GRIND
Heavy knives
and cleavers



FLAT GRIND
Slicers

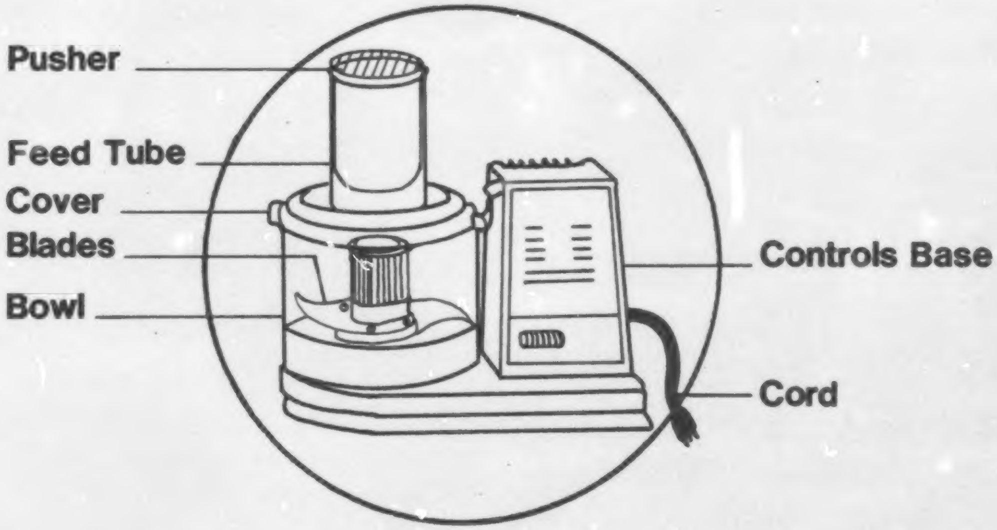


HOLLOW GRIND
Parers and carvers

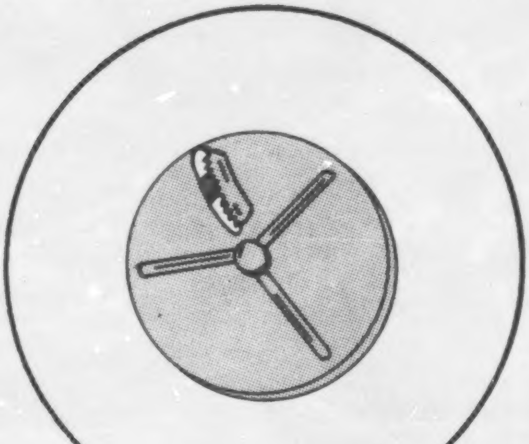


T-27

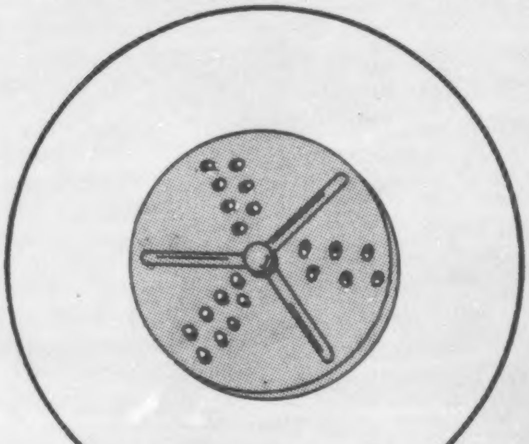
Food Processor Parts


Pusher
Feed Tube
Cover
Blades
Bowl
Controls Base
Cord

Slicing Disk

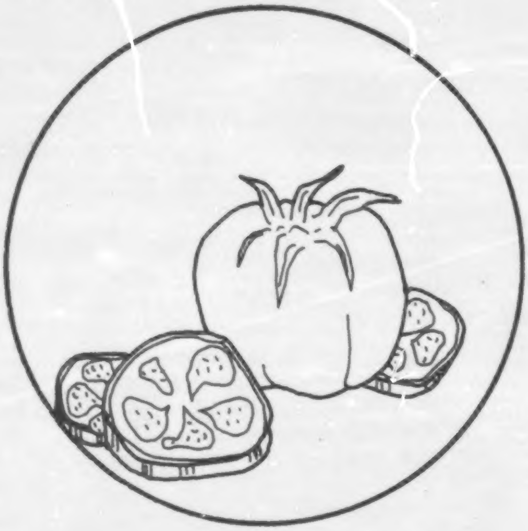


Shredding Disk

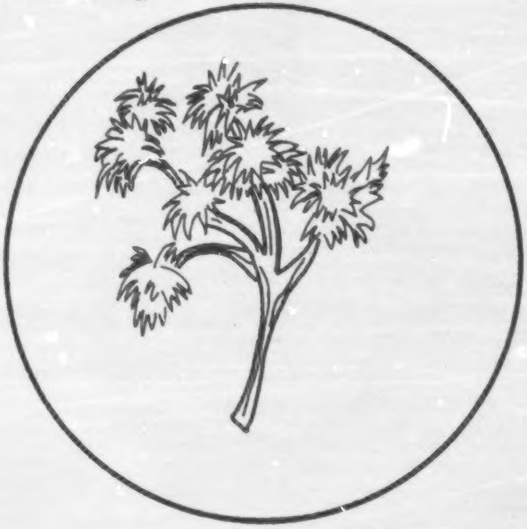


Simple Garnishes

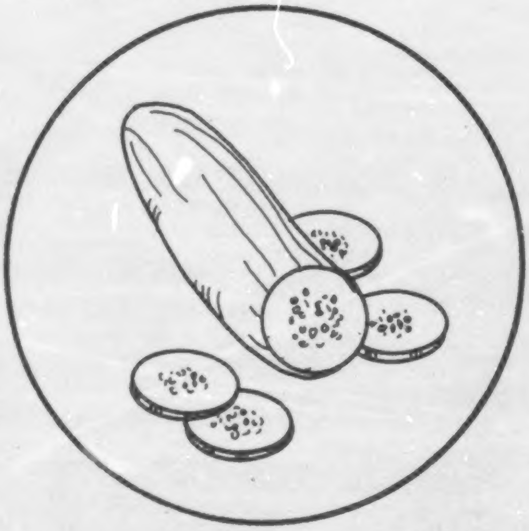
Tomatoes



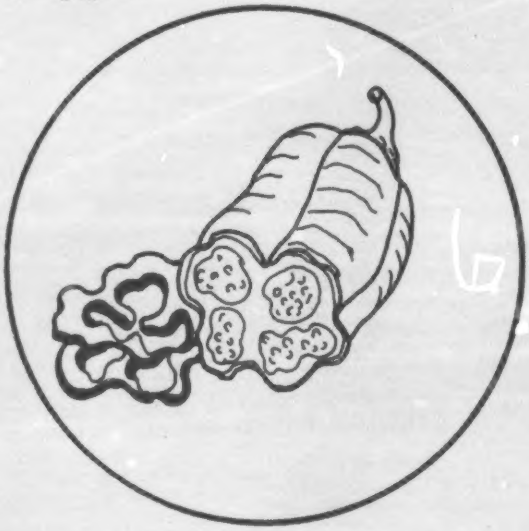
Parsley



Cucumber



Pepper



T-29

Classifications and Uses of Cheese

Hard Cheese Class

American Cheddar	- white to orange in color; mild to sharp in flavor; used in appetizers, cooked foods, salads, sandwiches, and desserts.
Edam	- yellow with red wax coating; nutlike flavor; used with fresh fruits or crackers.
Gouda	- Creamy yellow with red wax coating; mild flavor; used in appetizers, salads, and for desserts with fruit.
Parmesan	- yellow-white; sharp flavor; used as seasoning, topping for casseroles, and in cooking.
Romano	- yellow-white; piquant flavor; used in cooking, especially Italian recipes.
Swiss	- light yellow, large holes; mild, sweet flavor; used for appetizers, in salads and sandwiches, and in cooking.

Semisoft Cheese Class

Brick	- creamy yellow color, shaped like a brick; mild flavor; used as a snack food and in sandwiches.
Monterey Jack	- white; mild flavor; used in sandwiches and cooking, especially Mexican foods.
Muenster	- creamy white, tiny holes; mellow to pungent flavor depending on amount of aging; used for eating as is and in sandwiches.
Blue	- white with blue veins; sharp flavor; used for salads, salad dressings, and desserts.
Roquefort	- white with blue veins; sharp flavor; used for salads, salad dressings, and desserts.

Soft Cheese Class

Brie	- white; rich flavor; used for dessert or with fruit.
Camembert	- light yellow; rich flavor; used with fruit and as dessert.
Cottage	- white, with curds; mild flavor; used in salads and cooked foods, or with fruit.
Cream	- creamy white; mild; used in appetizers, spreads, sandwiches, salads, cooked foods, and desserts.
Neufchatel	- white; delicate flavor; used in appetizers, with fruit, and in spreads.

T-30

Seasons for Fruits

Variety	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Apples	X	X	X	X	/	/	/	/	X	X	X	X
Apricots						/	X	/				
Avocados	/	X	X	X	/	/	X	X	X	/	/	/
Blackberries						/	X	/				
Blueberries					/	/	X	/				
Cantaloupes					/	/	X	X	X	/	/	
Cherries					/	/	X	X	/			
Cononuts	X	/	/	/	/	/				/	/	X
Cranberries	/	/	/	/					/	/	X	X
Grapes	/				/	/	/	X	X	X	X	X
Grapefruit	X	X	X	X	X	/	/	/	/	X	X	X
Honeydew melons	/	/	/	/	/	/	X	/	X	/	/	/
Peaches						/	X	X	X	/		
Pears	/	/	/	/	/	/	/	X	X	X	/	/
Persimmons	/	/								/	X	X
Pineapples	/	/	X	X	X	X	X	/	/	/	/	/
Plums						/	X	X	X	/		
Pomegranates									/	X	X	/
Rhubarb			/	/	X	X	X	/				
Strawberries	/	/	/	/	X	X	/					
Tangerines	X	/	/	/						/	X	X
Watermelons				/	/	/	X	X	/			

Bananas, lemons, and oranges are available all months of the year.

X = peak season
/ = available

Seasons for Vegetables

Variety	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Artichokes	/	/	/	/	/						/	/
Asparagus		/	/	X	X	X						
Beets	/	/	X	/	X	X	X	X	X	X	X	X
Broccoli	X	X	X	X	/	/					/	X
Brussels sprouts	X	/	/							/	X	X
Cauliflower	X	X	X	X	X	X	/	/	X	X	X	X
Celery	X	X	X	X	/	/	/	/	/	X	X	X
Corn					/	/	X	X	X	/		
Cucumbers	/	/	/	X	X	X	X	X	X	/	/	/
Eggplant	/	/	X	X	X	/	/	X	X	X	/	/
Mushrooms	X	/	/	/	/	/	/	/	/	X	X	X
Okra			/	/	/	/	X	X	X	X	/	/
Onions (green)					/	X	X	X	/			
Peppers	/	/	/	/	/	/	/	X	X	X	/	/
Potatoes (sweet)	X	X	X	/	/	/	/	/	X	X	X	X
Radishes	/	/	/	X	X	X	X	X	/	/	/	/
Rutabagas	/	/	/	/			/	/	/	/	/	/
Spinach	X	X	X	X	X	X	/	/	/	X	X	X
Squash	/	/	/	/	X	X	X	X	X	X	X	/
Tomatoes	/	/	/	X	X	X	X	X	X	X	X	X
Turnips	X	X	X	/	/	/	/	/	X	X	X	X

Beans (green), cabbage, carrots, lettuce, onions (dry), peas, and potatoes (white) are available all months of the year.

X = peak season
/ = available

The Digestive System

DIRECTIONS: Label the parts of the digestive system.

1 ____________________

2 ____________________

3 ____________________

4 ____________________

5 ____________________

6 ____________________

7 ____________________

8 ____________________

9 ____________________

10 ____________________

11 ____________________

12 ____________________

13 ____________________

14 ____________________

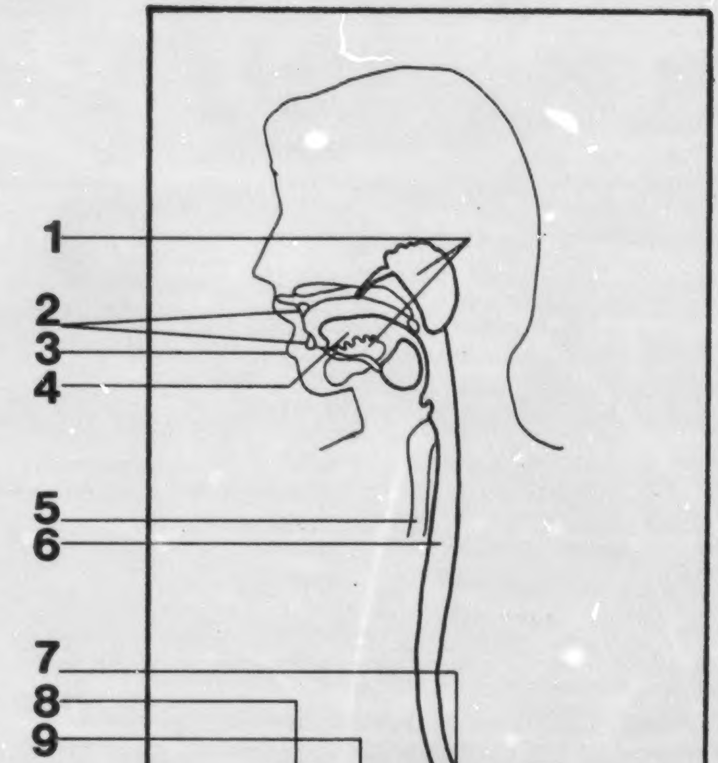
15 ____________________

16 ____________________

17 ____________________

18 ____________________

19 ____________________


1
2
3
4
5
6
7
8
9
10
11
12
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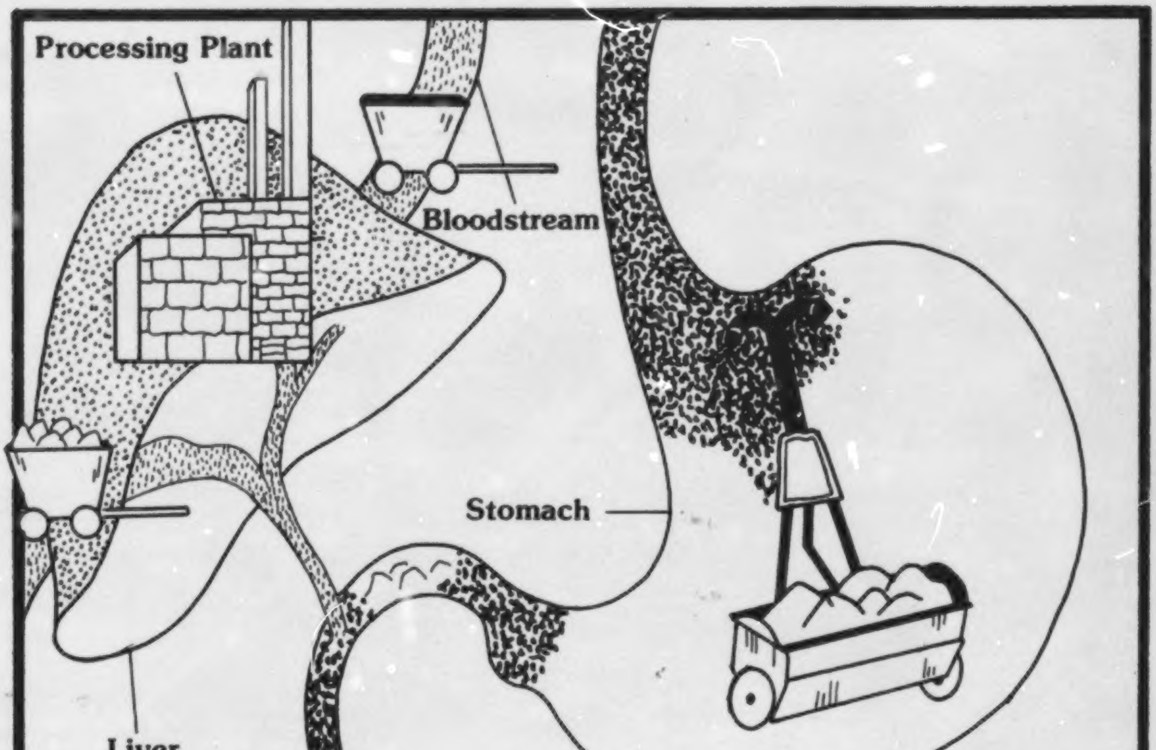
14
15
16
17
18
19

Process of Absorption


Processing Plant
Bloodstream
Stomach
Liver
Small Intestine
Villi
Bloodstream

T-34

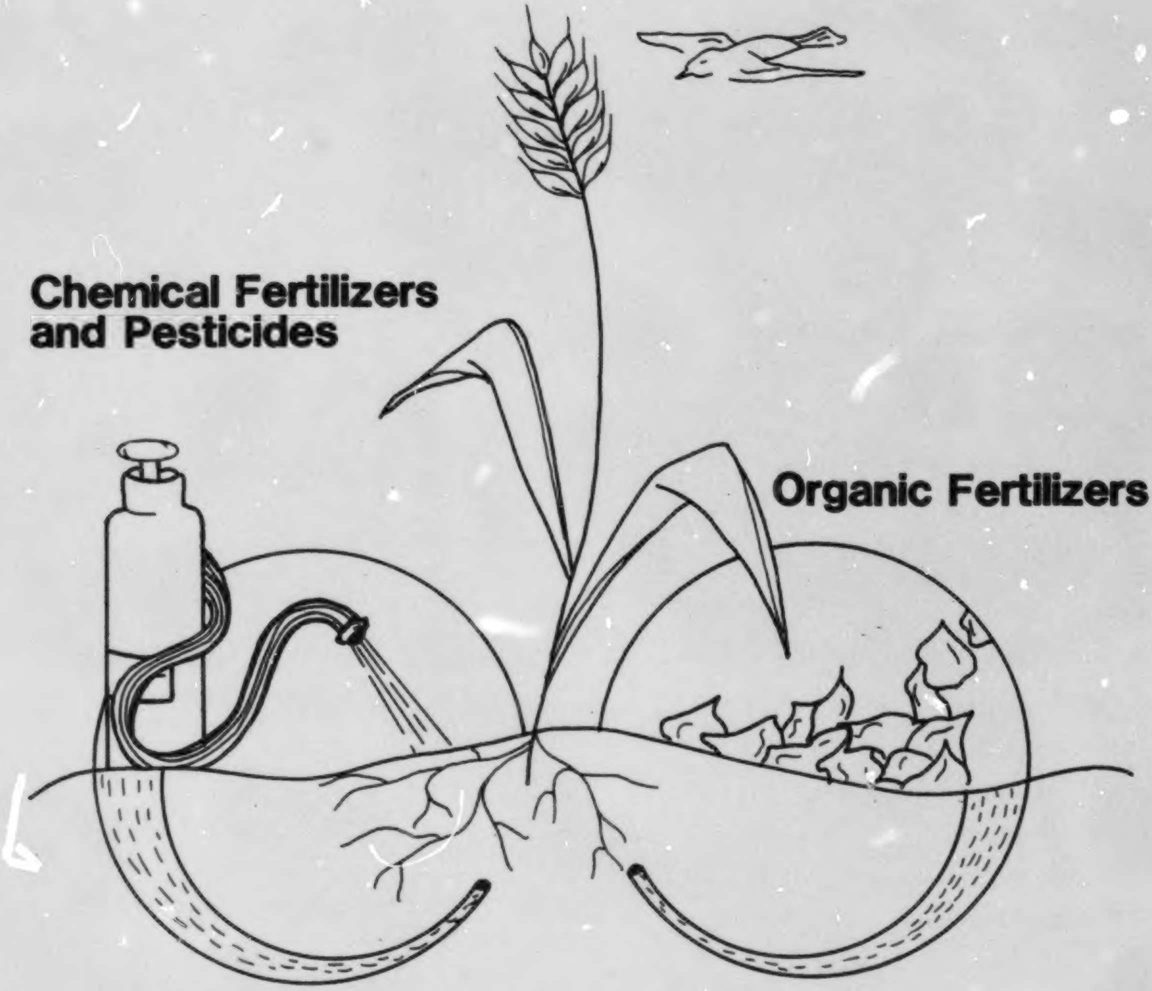
Sniffing Out Sodium

Food	Sodium Content (mg)
Apple Pie	406
Brownie With Nuts	126
Catsup	177
Cheddar Cheese	119
Chicken Noodle Soup	955
Corn	236
Devil's Food Cake With Chocolate Icing	118
Egg	61
Frankfurter	627
Fudge (Chocolate)	86
Ice Cream	75
Margarine	138
Milk (Whole)	138
1 Olive (Green)	168
Peanut Butter	177
Pickle	1922

Assume all foods consist of one standard serving

T-35

“Organically” and “Inorganically” Grown


Chemical Fertilizers and Pesticides
Organic Fertilizers

T-36

Food Consumption Patterns

Developed Countries

Countries	Calories Per Day	Grains & Starches	Fruits & Vegetables	Meat Poultry Fish	Fat & Oils
North America	3155	40%	9%	34%	17%
Western Europe	3111	46%	8%	28%	18%
USSR	3182	70%	4%	17%	9%
Total	3043	55%	7%	24%	14%

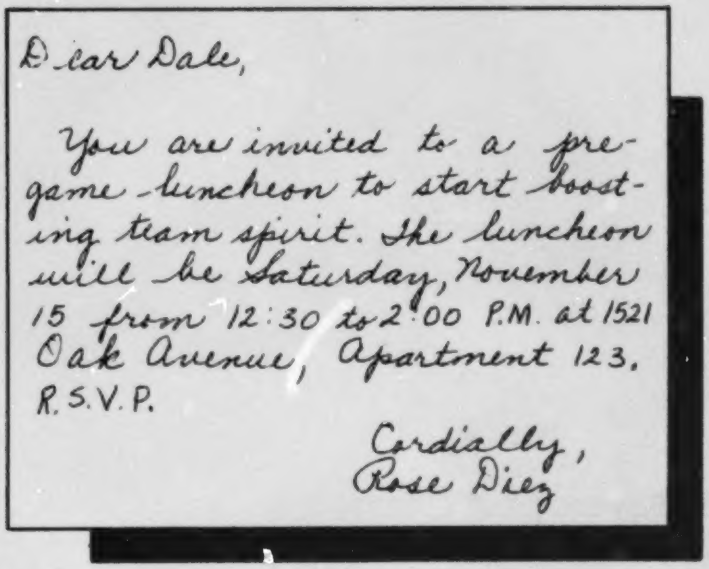
Less Developed Countries

Countries	Calories Per Day	Grains & Starches	Fruits & Vegetables	Meat Poultry Fish	Fat & Oils
South America	2276	68%	7%	17%	8%
China	2045	80%	9%	8%	3%
Southeast Asia	2121	82%	8%	7%	3%
Africa-South of Sahara	1730	80%	10%	5%	5%
Total	2097	77%	10%	8%	5%

Sources: FAO Food Balances

Sample Invitations and Replies
INFORMAL

Invitation

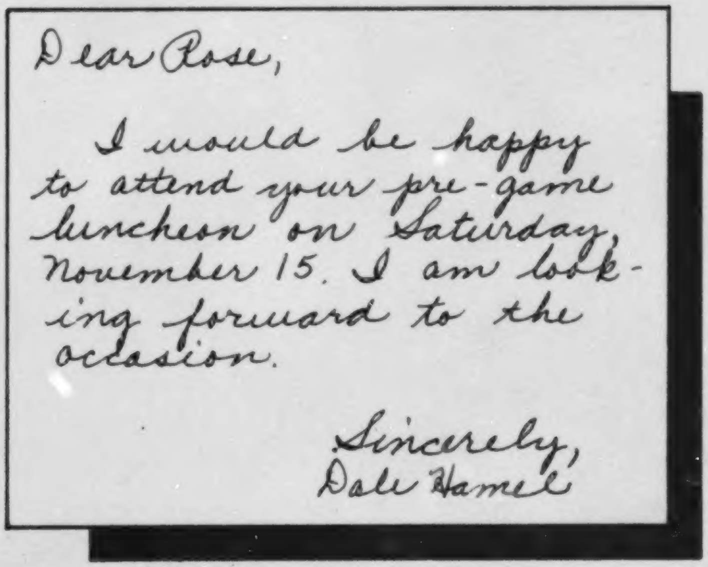


Dear Dale,

You are invited to a pre-game luncheon to start boosting team spirit. The luncheon will be Saturday, November 15 from 12:30 to 2:00 P.M. at 1521 Oak Avenue, Apartment 123. R.S.V.P.

Cordially,
Rose Diez

Reply



Dear Rose,

I would be happy to attend your pre-game luncheon on Saturday, November 15. I am looking forward to the occasion.

Sincerely,
Dale Hamel

T-37b

Sample Invitations and Replies (cont.)

FORMAL

Invitation

THE FIRST PERIOD
FOODS CLASS
REQUESTS THE PRESENCE OF
MR. AND MRS. KARL SCHAEFER
AT A HOLIDAY BUFFET
ON FRIDAY THE TENTH OF MARCH
FROM THREE UNTIL FIVE O' CLOCK P.M.
IN THE HOME ECONOMICS LIVING AREA

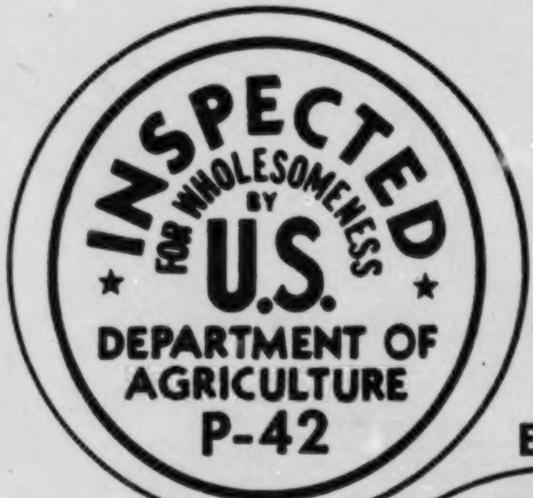
R.S.V.P.

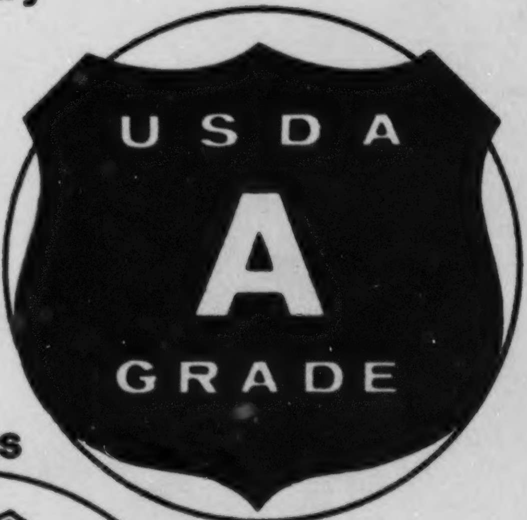
Reply

MR. AND MRS. KARL SCHAEFER
GRACIOUSLY ACCEPT THE INVITATION
TO A HOLIDAY BUFFET
ON FRIDAY THE TENTH OF MARCH

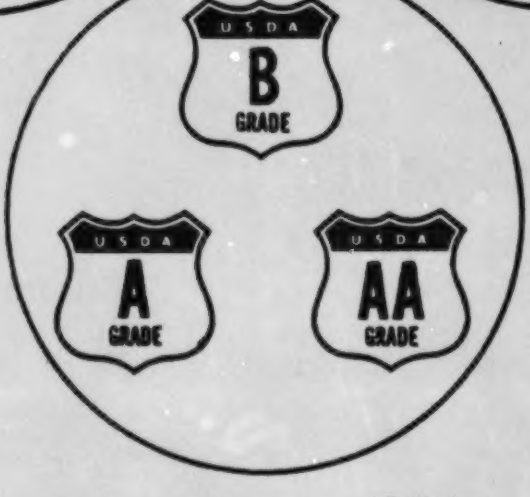
USDA Grade Labels

Poultry


INSPECTED
FOR WHOLESOMENESS
BY
U.S.
DEPARTMENT OF
AGRICULTURE
P-42


USDA
A
GRADE

Eggs


USDA
B
GRADE
USDA
A
GRADE
USDA
AA
GRADE

S-P-E-A-K — U-P!

Steps in Complaining

START WHERE THE FOOD WAS PURCHASED. EXPLAIN THE PROBLEM IN A FACTUAL MANNER TO THE STORE'S MANAGER. MOST REPUTABLE STORES, AGENCIES AND SERVICES WILL TRY TO HELP.

PREPARE A LETTER TO THE MANUFACTURER OF THE PRODUCT. THE ADDRESS CAN BE FOUND ON THE PACKAGE OF THE FOOD OR FROM THE MANAGER OF THE STORE.

ELICIT HELP FROM LOCAL CONSUMER PROTECTION AGENCIES OR ORGANIZATIONS SUCH AS THE BETTER BUSINESS BUREAU, CHAMBER OF COMMERCE, STATE OR LOCAL CONSUMER ORGANIZATIONS, AND ACTION LINES SPONSORED BY LOCAL NEWSPAPERS, TV OR RADIO.

ASK FOR HELP FROM THE FOOD AND DRUG ADMINISTRATION.

KNOW WHERE AND HOW TO OBTAIN LEGAL ASSISTANCE IF IT BECOMES NECESSARY.

U

P

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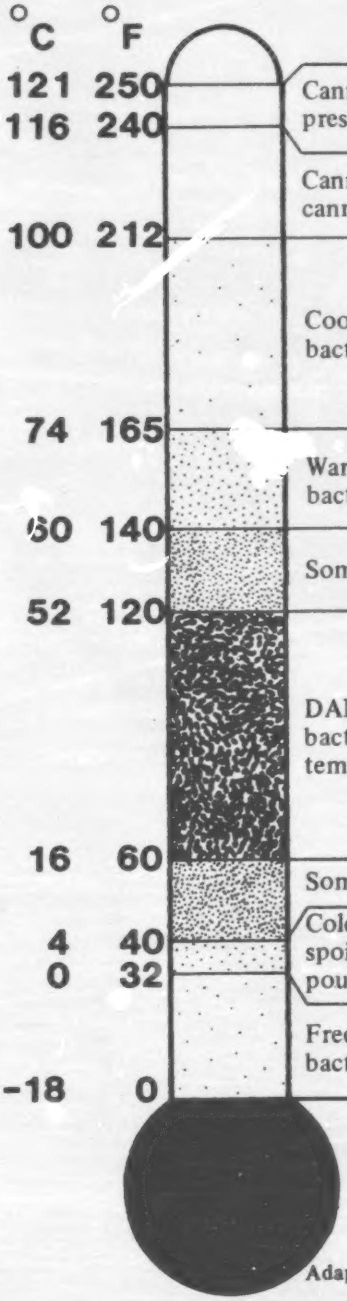
T-40

Temperature of Food for Control of Bacteria



Canning temperatures for low-acid vegetables, meat, and poultry in pressure canner.

Canning temperatures for fruits, tomatoes, and pickles in water-bath canner.

Cooking temperatures destroy most bacteria. Time required to kill bacteria decreases as temperature is increased.

Warming temperatures prevent growth but allow survival of some bacteria.

Some bacterial growth may occur. Many bacteria survive.

DANGER ZONE. Temperatures in this zone allow rapid growth of bacteria and production of toxins by some bacteria. (Foods in this temperature zone should not be held for more than 2 or 3 hours.)

Some growth of food poisoning bacteria may occur.

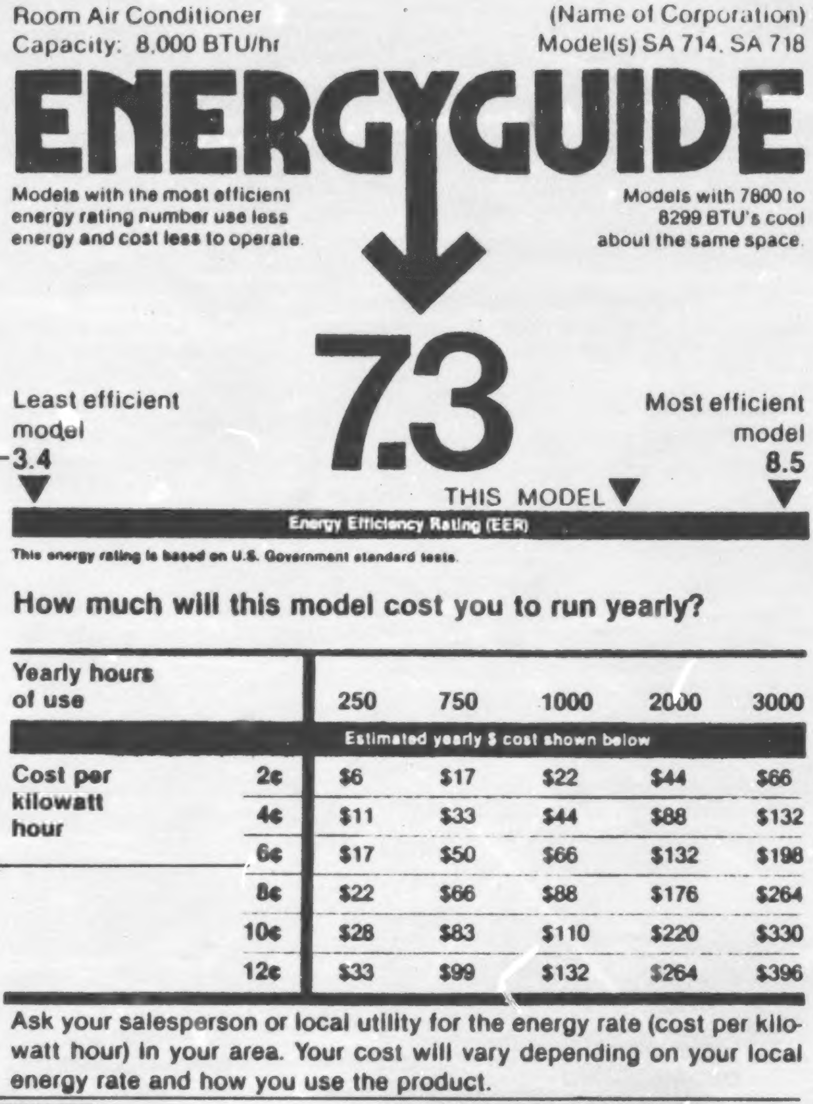
Cold temperatures permit slow growth of some bacteria that cause spoilage. (Raw meats should be used within 5 days, ground meat, poultry, and fish within 2 days.)

Freezing temperatures stop growth of bacteria, but may allow bacteria to survive.

Adapted from: American Home Economics Association,
Handbook of Food Preparation, 1975

Seals of Safety Approval

Information should include:



Room Air Conditioner
Capacity: 8,000 BTU/hr

(Name of Corporation)
Model(s) SA 714, SA 718

ENERGYGUIDE

Models with the most efficient energy rating number use less energy and cost less to operate.

Models with 7800 to 8299 BTU's cool about the same space.

7.3

Estimates of energy efficiency or energy cost.

Least efficient model 3.4

THIS MODEL

Most efficient model 8.5

Energy Efficiency Rating (EER)

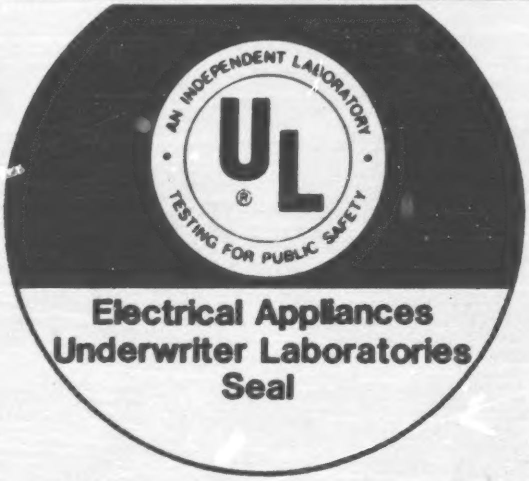
This energy rating is based on U.S. Government standard tests.

How much will this model cost you to run yearly?

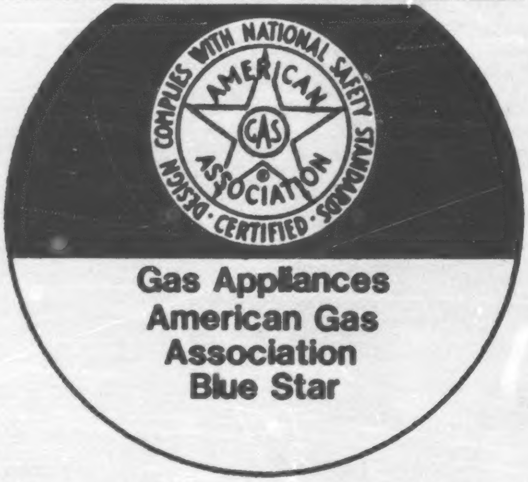
Table showing yearly cost figures at various utility rates for various levels of use.

Yearly hours of use		250	750	1000	2000	3000
		Estimated yearly $ cost shown below				
Cost per kilowatt hour	2¢	$6	$17	$22	$44	$66
	4¢	$11	$33	$44	$88	$132
	6¢	$17	$50	$66	$132	$198
	8¢	$22	$66	$88	$176	$264
	10¢	$28	$83	$110	$220	$330
	12¢	$33	$99	$132	$264	$396

Ask your salesperson or local utility for the energy rate (cost per kilowatt hour) in your area. Your cost will vary depending on your local energy rate and how you use the product.

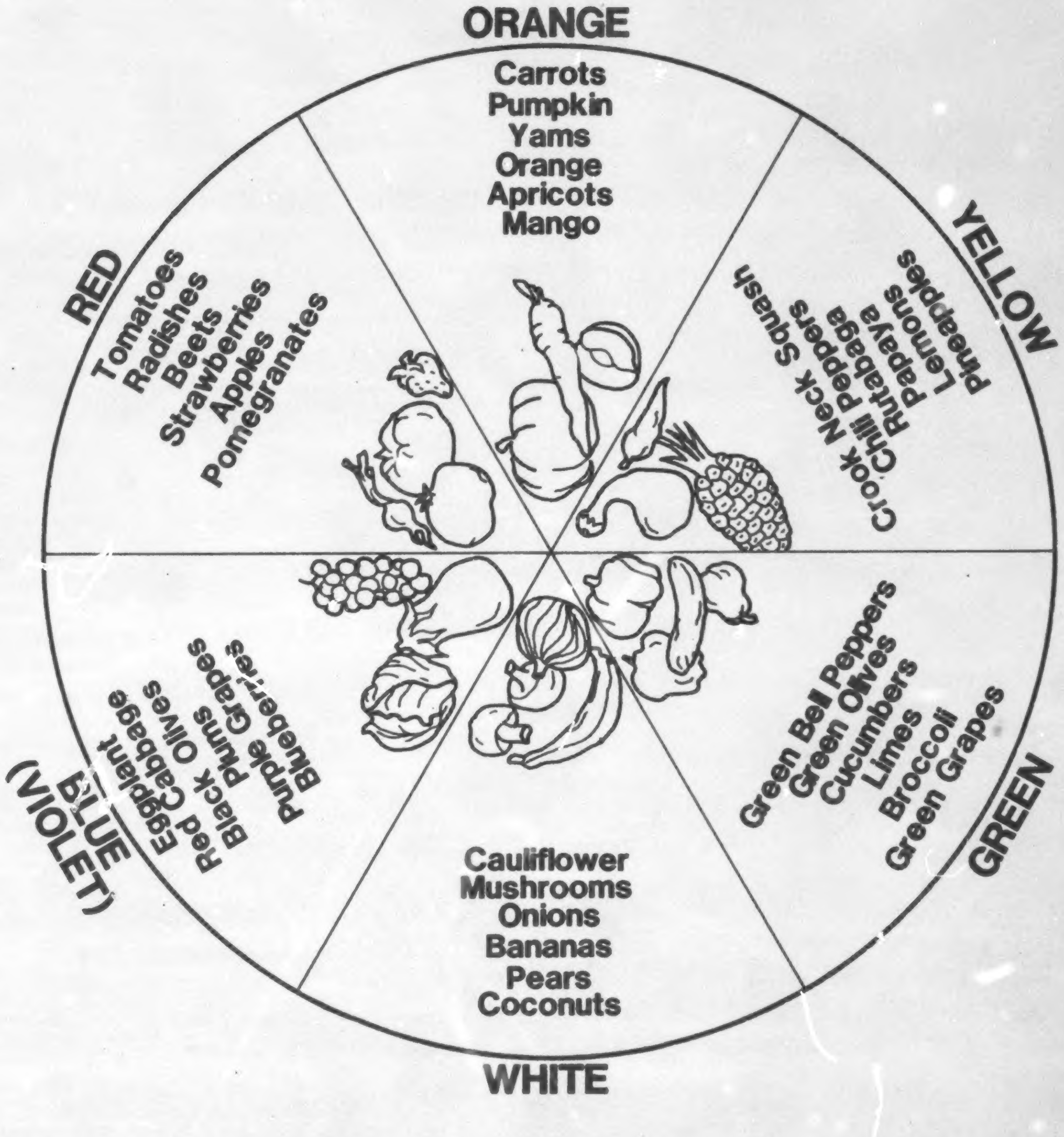

AN INDEPENDENT LABORATORY
UL
TESTING FOR PUBLIC SAFETY

Electrical Appliances
Underwriter Laboratories
Seal


DESIGN COMPLIES WITH NATIONAL SAFETY STANDARDS
AMERICAN GAS ASSOCIATION
CERTIFIED

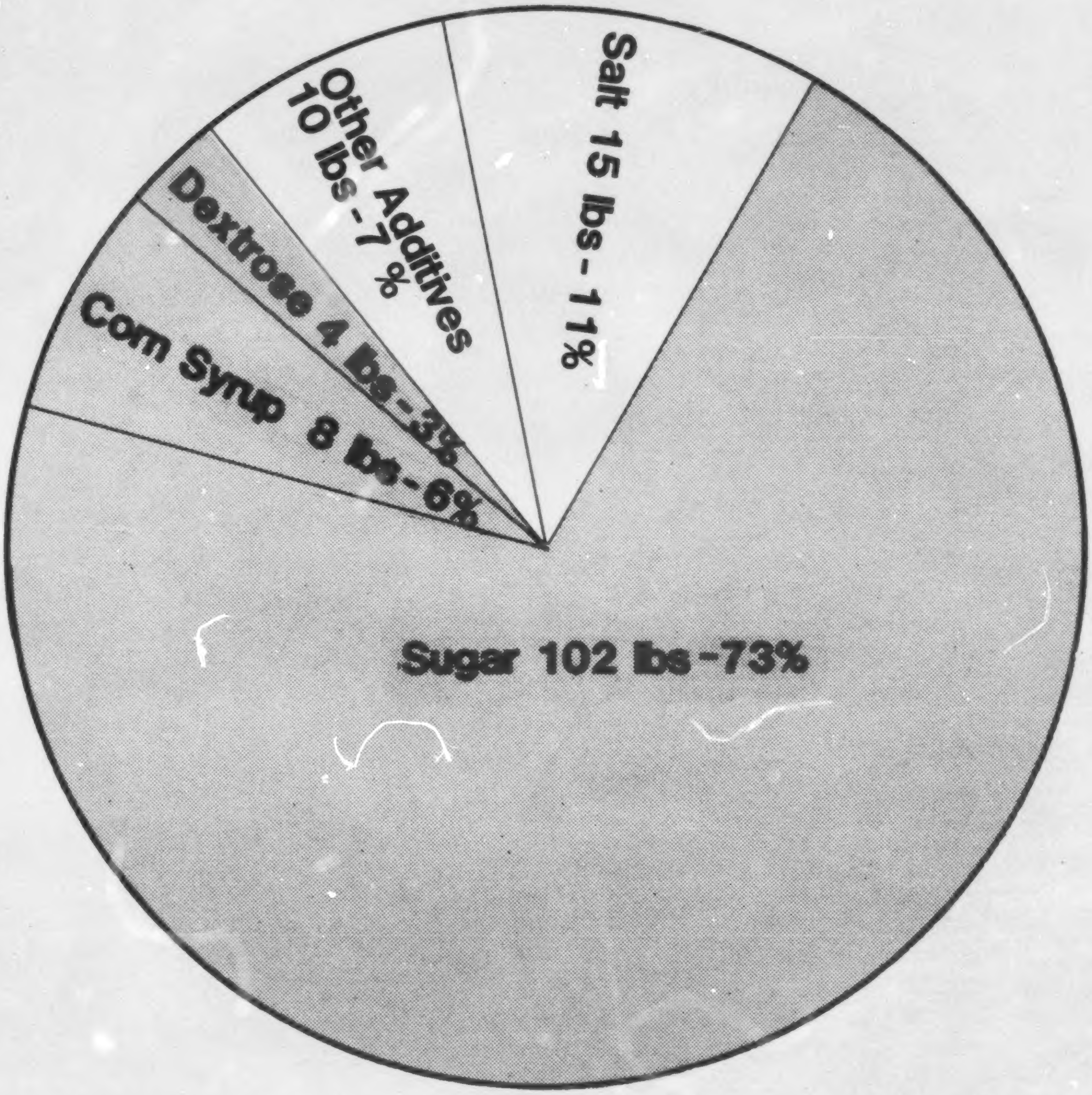
Gas Appliances
American Gas
Association
Blue Star

Color Wheel of Fruits and Vegetables

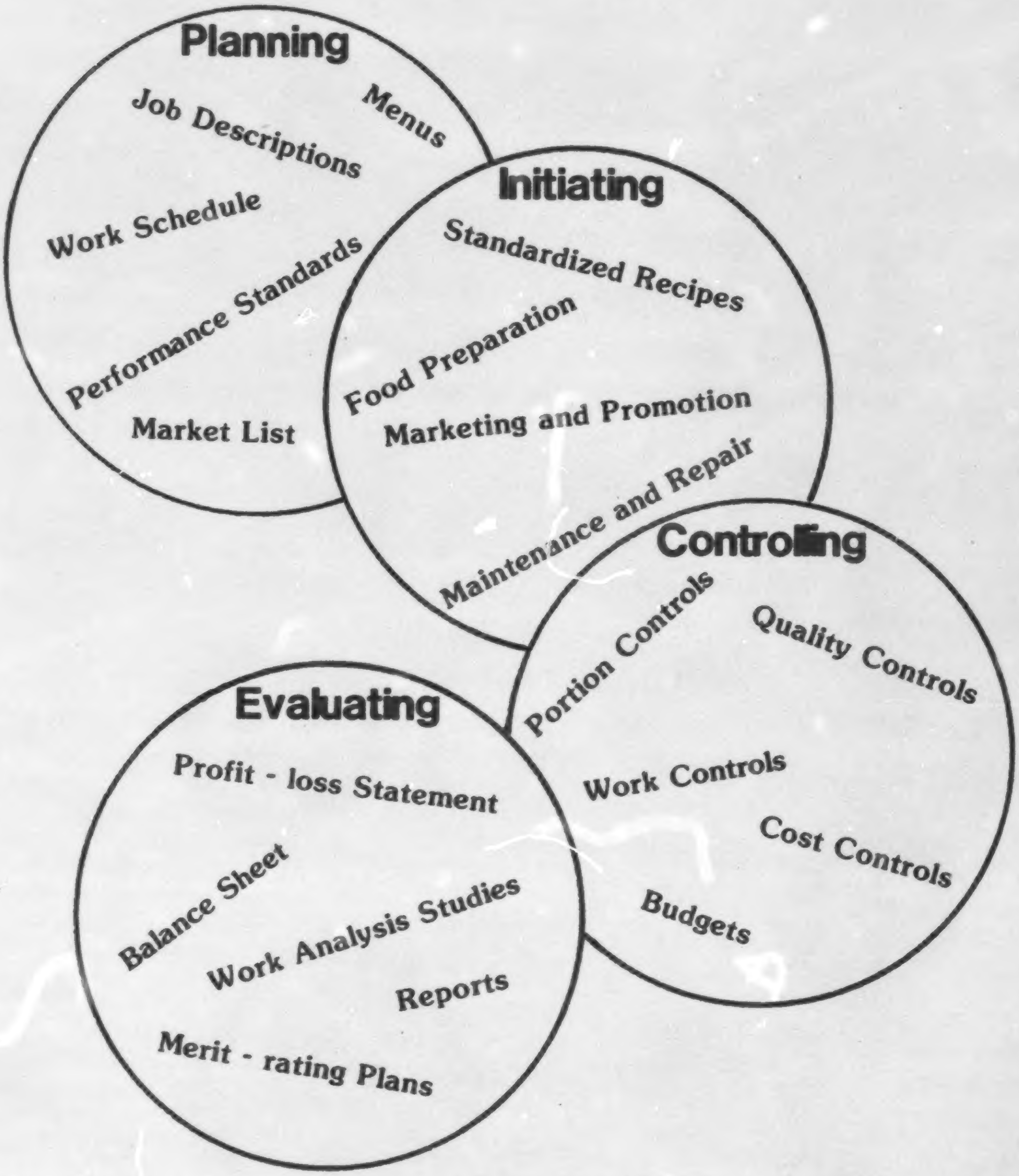

ORANGE
Carrots
Pumpkin
Yams
Orange
Apricots
Mango
YELLOW
Pineapples
Lemons
Papaya
Rutabaga
Chili Peppers
Crook Neck Squash
GREEN
Green Bell Peppers
Green Olives
Cucumbers
Limes
Broccoli
Green Grapes
WHITE
Cauliflower
Mushrooms
Onions
Bananas
Pears
Coconuts
BLUE (VIOLET)
Blueberries
Purple Grapes
Plums
Black Olives
Red Cabbage
Eggplant
RED
Tomatoes
Radishes
Beets
Strawberries
Apples
Pomegranates

T-43

Percentages of Annual Additive Intakes



The Management Process



Planning

Menus
Job Descriptions
Work Schedule
Performance Standards
Market List

Initiating

Standardized Recipes
Food Preparation
Marketing and Promotion
Maintenance and Repair

Controlling

Portion Controls
Quality Controls
Work Controls
Cost Controls
Budgets

Evaluating

Profit - loss Statement
Balance Sheet
Work Analysis Studies
Reports
Merit - rating Plans

Nutrition Quick Check

Have You Eaten These Foods Within the Past Twenty-Four Hours?

	Yes	No	+ or - No. of servings
MEAT, POULTRY, FISH, AND BEANS GROUP TWO SERVINGS (One serving = 1 egg, 2 T. peanut butter, 2 - 3 oz. cooked lean meat, or 1/2 - 3/4 c. cooked dry beans)			
MILK AND CHEESE GROUP FOUR SERVINGS (One serving = 1 c. yogurt, 3/4 c. milk, 1 oz. cheddar cheese, 1/2 c. cottage cheese, or 1/2 c. ice cream)			
FRUIT AND VEGETABLE GROUP FOUR SERVINGS (One serving = 1 med. orange, apple, or banana, 4 oz. orange juice, 8 oz. tomato juice, 1/2 cantaloupe or grapefruit, 1/2 c. cooked vegetable, or 1 medium potato)			
BREAD AND CEREAL GROUP FOUR SERVINGS (One serving = 1 slice bread, 1/2 - 3/4 c. cooked cereal, cornmeal, macaroni, or spaghetti, or 1 oz. dry cereal)			

Fourteen servings from the proper groups = **A RIGHT-ON DIET!**

Less than fourteen servings = **WATCH IT – YOU NEED TO KEEP YOUR STRENGTH UP!**

More than fourteen servings = **OOOPS! – YOU MAY BE COUNTING CALORIES SOON!**

T-46

Sugar Content of Breakfast Cereals

Product	Manufacturer	Total Sugar (% dry weight)
Sugar Smacks	Kellogg	56.0
Apple Jacks	Kellogg	54.6
Super Sugar Crisp	General Foods	46.0
Frosted Rice Krinkles	General Foods	44.0
Cap'n Crunch's Crunch Berries	Quaker Oats	43.3
Cocoa Pebbles	General Foods	42.6
Cookie-Crisp, Chocolate	Ralston-Purina	41.0
Sugar Frosted Flakes	Kellogg	41.0
Cookie-Crisp, Oatmeal	Ralston-Purina	40.1
Alpha-Bits	General Foods	38.0
Trix	General Mills	35.9
Cocoa Puffs	General Mills	33.3
Post Raisin Bran	General Foods	30.4
Raisin Bran	Kellogg	29.0
Frosted Mini-Wheats	Kellogg	26.0
100% Bran	Nabisco	21.0
All-Bran	Kellogg	19.0
40% Bran Flakes	General Foods	13.0
Total	General Mills	8.3
Wheaties	General Mills	8.2
Grape-Nuts	General Foods	7.0
Special K	Kellogg	5.4
Corn Flakes	Kellogg	5.3
Rice Chex	Ralston-Purina	4.4
Corn Chex	Ralston-Purina	4.0
Wheat Chex	Ralston-Purina	3.5
Cheerios	General Mills	3.0
Shredded Wheat	Nabisco	0.6
Puffed Rice	Quaker Oats	0.1

Condensed and adapted from an analysis published in 1979 by the U.S. Department of Agriculture.

T-47

Increase Nutrients During Pregnancy

PROTEIN	BY	66%
VITAMIN A	BY	25%
B VITAMINS		
FOLACIN	BY	100%*
B 6	BY	50%
VITAMIN C	BY	33%
VITAMIN D	BY	100%*
VITAMIN E	BY	25%
CALCIUM	BY	50%
IRON	BY	SUPPLEMENT*
PHOSPHORUS	BY	50%
MAGNESIUM	BY	50%
ZINC	BY	50%
WATER & JUICES		6-8 GLASSES PER DAY**

*Supplements may be required, but should only be used if prescribed by a physician. Some nutrients can be toxic in large doses and can cause birth defects.

**In addition to milk. Avoid soft drinks because of empty calories and excessive amounts of caffeine in tea, coffee, and cola drinks.

Food Servings for Young Children

Food Group	Servings Per Day	Age 1-3	Age 3-6
Fruits and Vegetables	4 or more	3-4 oz. juice ½ med. apple ½ med. orange 1-2 T. cooked vegetables	4 oz. juice ½ med. apple ½ med. orange ¼ cup cooked vegetables
Milk and Cheese	3 or more	4-6 oz. milk 1/2-3/4 cup yogurt 1 oz. cheese	6 oz. milk 3/4 cup yogurt 1 oz. cheese
Bread and Cereal	3 or more	2 T. cooked cereal 1/3 cup dry cereal 1/2 slice bread	¼ cup cooked cereal ½ cup dry cereal 1 slice bread
Meat, Fish, Poultry and Beans	2 or more	1 ounce lean meat 1 egg 2 T. peanut butter ¼ cup dried peas or beans	1 ounce lean meat 1 egg 2 T. peanut butter ¼ cup dried peas or beans

T-49

Guide for Meal Planning

Breakfast

FRUIT
ENTREE (CEREAL OR PROTEIN FOOD)
BREAD
MILK OR OTHER BEVERAGE

Lunch

ENTREE (PROTEIN FOOD)
VEGETABLE OR FRUIT
BREAD
MILK OR OTHER BEVERAGE

Dinner

SALAD
ENTREE (PROTEIN FOOD)
2 VEGETABLES OR 1 VEGETABLE AND 1 FRUIT
BREAD
MILK OR OTHER BEVERAGE

Snack

ANY FOOD GROUP WHERE A SERVING IS NEEDED

Include Daily:

Fruits and Vegetables	4 Servings
Bread and Cereals	4 Servings
Milk and Cheese	2 Servings, Adults 4 Servings, Teens
Meat, Eggs, or Dried Beans	2 Servings or More

***Snacks are optional but should be nutritious and planned within the day's recommended allowances.**

Menu Planning Sheet

	Breakfast	Snack*	Lunch	Snack*	Dinner	Snack*
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

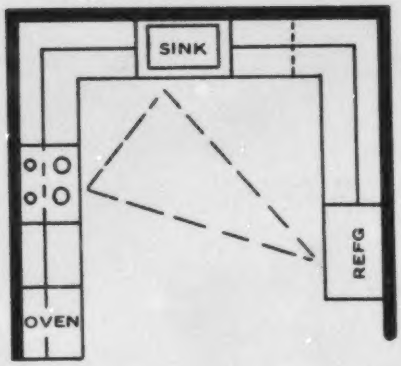
Include Daily:

Fruit and Vegetable Group	4 Servings (1 High in Vitamin C; 1 deep yellow or green at least every other day)
Bread and Cereal Group	4 Servings
Milk and Cheese Group	2-3 Servings, Ages 0-9 3 Servings, Ages 9-12 4 Servings, Teens 2 Servings, Adults 3 Servings, Pregnant Women 4 Servings, Nursing Women
Meat and Bean Group	2 or More Servings

*Snacks are optional but should be nutritious and planned within the day's recommended allowances.

Kitchen Planning

U SHAPE


SINK
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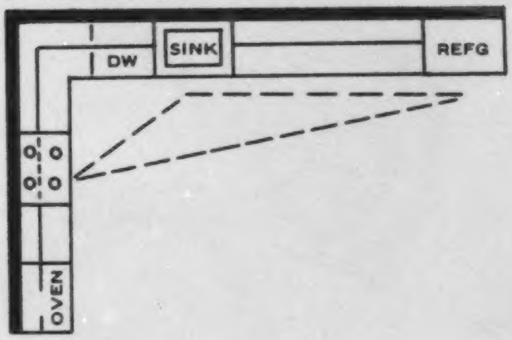
L SHAPE


DW
SINK
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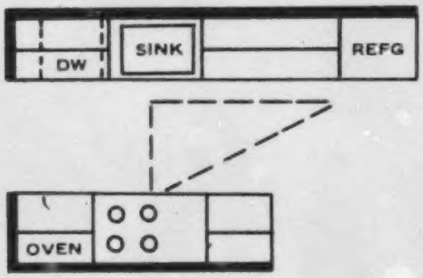
CORRIDOR SHAPE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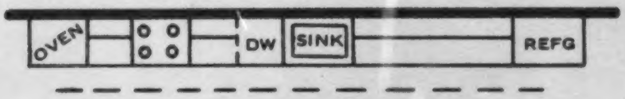
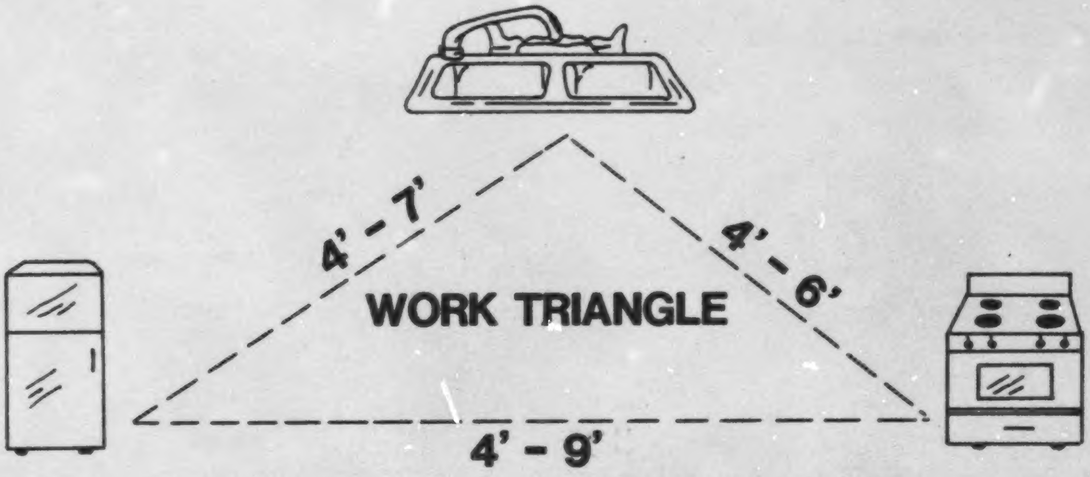
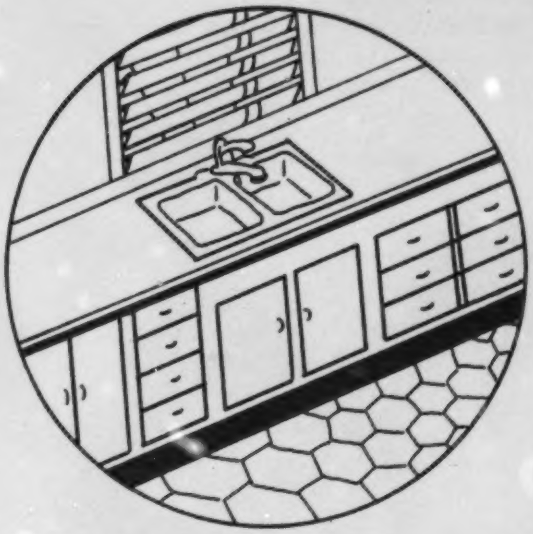
ONE WALL


OVEN
DW
SINK
REFG


4' – 7'
4' – 6'
WORK TRIANGLE
4' – 9'

Kitchen Storage

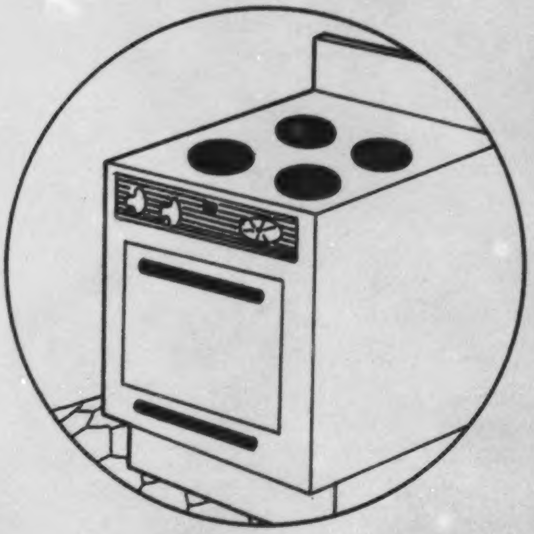


Near Sink

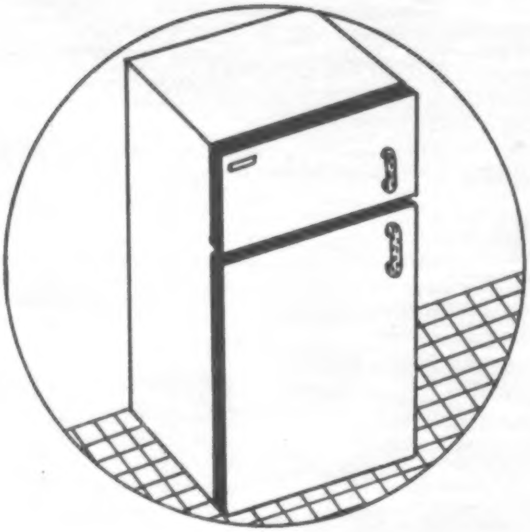
Equipment first used with water
Supplies used in clean-up
Trash and garbage containers
Dish cloths and paper towels
Dishes

Near Range

Cookware
Small cooking utensils
Canned goods, dry goods and seasoning used in cooking



Kitchen Storage (Cont.)

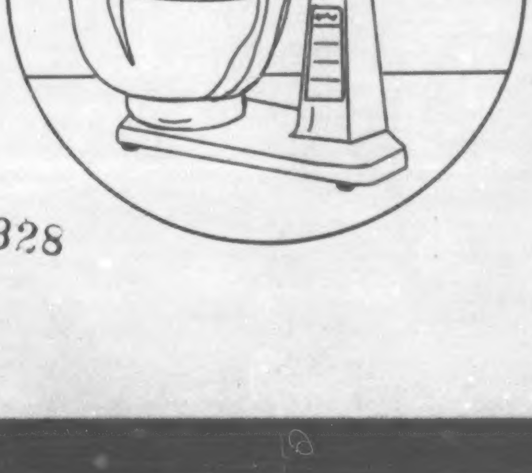


Near Refrigerator/Freezer

Wrapping products
Storage containers
Can opener and small equipment for preparing food from the refrigerator/freezer

Near Mixing Area

Mixer
Mixer bowls and utensils
Baking pans and utensils
Staples, spices, and food mixes



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FOOD AND NUTRITION
REFERENCE LIST

Books

Brewster, Letitia, and Jacobson, Michael F. *The Changing American Diet.* Washington, DC: Center for Science in the Public Interest, 1978. 80 pp. ($2.50, l.p. Our changing food habits; foods in our diet; nutrients in our diet; statistics from USDA; charts and graphs.)

Brody, Jane. *Jane Brody's Nutrition Book.* New York: W.W. Norton & Company, 1981. 552 pp. ($8.95, paperback. What to Eat: the new nutrition, protein, fats, eating well the low-fat way, carbohydrates, sugar; The Noncaloric Nutrients–fiber, vitamins, minerals, salt; What to Drink–water, coffee, tea, milk, alcohol; What to Do About Your Weight–obesity, why "diets" don't work, weight control; Food for Special Lives–pregnancy, feeding your baby, child feeding, adolescence, later years, athletes–can you eat to win?, vegetarians; What's in Your Food–additives, health foods, and labels.)

Burros, Marian. *Keep It Simple: 30-Minute Meals from Scratch.* New York: William Morrow and Company, Inc., 1981. 256 pp. ($11.95. The politics of food; 30-minute meals from scratch with menus and recipes; the bare essentials for a 30-minute kitchen; substitutions, hors d'oeuvres and desserts, prepare-ahead mixes.)

The Buying Guide for Fresh Fruits, Vegetables and Nuts, 7th ed. Hagerstown, MD: Blue Goose, Inc., 1983. 125 pp. ($4.00, single copy. Consumerism, nutrition; organic foods; hydroponics–soilless cultivation; storing fruits and vegetables, quality, grade, and condition; guide to availability; buying tips; dietary recommendations; Composition of Foods charts; information and colored pictures of many varieties of fruits, vegetables, and nuts.)

Canning, Freezing and Drying, 2nd ed. Menlo Park, CA: Lane Publishing Company (Sunset Books). 1981. 128 pp. ($4.95, paperback, l.p. Recipes, techniques, information and charts on canning, freezing, and drying foods; special features include freezer and microwave jams, brandied fruits, flavored vinegars, sunshine preserves, fruit leathers, drying fresh herbs, etc.)

Jerome, Norge; McCleery, Judith; and Wolf, Isabel D. *Help Yourself: Choices in Food and Nutrition.* New York: Butterick Publishing Company, 1981. 550 pp. ($19.90, l.p. Order from Maclean Hunter Learning Resources. Helping yourself; knowing about nutrition; food facts; using nutrition to choose; getting ready to cook; creative cooking concepts; and eating out and entertaining.)

Katz, Deborah, and Goodwin, Mary T. *Food: Where Nutrition, Politics, and Culture Meet.* Washington, D.C.: Center for Science in the Public Interest, 1976. 214 pp. ($4.50, l.p. Eating patterns; nutrition; food and the consumer; food supply; hunger in the United States; and world hunger.)

Kowtaluk, Helen, and Kopan, Alice O. *Food for Today*, 2nd ed. Peoria, IL: Bennett Publishing Company, 1982. 573 pp. ($17.58, s.p., with student guide. Nutrition for good health; consumer decisions; food preparation and service; creative cooking; careers. SBF.)

Largen, Velda L. *Guide to Good Food.* South Holland, IL: The Goodheart-Willcox Company, 1979. 640 pp. ($17.06, s.p., with activity book and instructor's guide. Importance of food; management of food; putting it together; foods of the world.)

Largen, Velda L. *Guide to Nutrition*. South Holland, IL: The Goodheart-Willcox Company, 1981. 144 pp. ($6.72, s.p. Importance of nutrition; nutritional needs; nutrition in the life cycle; planning meals; safeguarding the family's health; and career opportunities.)

Males in Home Economics Classes: A Teacher's Guide. Lubbock, TX: Home Economics Instructional Materials Center, 1982. ($7.50, 153 pp. General strategies for involving males in home economics classes through classroom environment, classroom image, public relations, FHA/HERO, home economics careers, and instructional materials; teaching strategies for involving males in each subject area of home economics.)

Medved, Eva. *The World of Food*, 3rd. ed. Lexington, MA: Ginn and Company, 1981. 599 pp. ($11.95, s.p. Tomorrow and today; tools of the trade; the world of cookery; the language of meals; the conservation of foods; and looking ahead. S, SBF.)

Newberry, Lynn, and Fisher, M. Frances. *The Food Book*. South Holland, IL: The Goodheart-Willcox Company, Inc., 1981. 368 pp. ($12.98, s.p., with instructor's guide. Food and people; tools of the trade; working with food; managing mealtime; and widening food horizons.)

The New Nutrition: Teacher's Guide and *Student's Guide*. Lubbock, TX: Home Economics Instructional Materials Center, 1982. ($10.00, 278 pp., teacher's guide; $6.50, 151 pp., student's guide. Making the new nutrition work for you; Dietary Guideline I–eat a variety of food; Dietary Guideline II–maintain ideal weight; Dietary Guideline III–avoid too much fat; Dietary Guideline IV–eat foods with adequate starch and fiber; Dietary Guideline V–avoid too much sugar; Dietary Guideline VI–avoid too much sodium; Dietary Guideline VII–if you choose to drink, do so in moderation; and media resources.)

Ohl, Suzanne Sickler; Duyff, Roberta Larson; and Hasler, Doris. *Guide to Modern Meals*, 3rd ed. New York: Webster Division, McGraw-Hill Book Company, 1981. 640 pp. ($20.37, l.p., with teacher's guide. Good choices for good eating; new ways of eating; managing food resources; the foods we eat; special ways with foods; and resources. S, SBF.)

White, Ruth Bennett. *Food and Your Future*, 2nd ed. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1979. 448 pp. ($17.28, l.p. Your food in a changing world; your food and nutrition; successful meal management; nutrition and the early years; and research. S, SBF.)

l.p.	list price	S	State adopted book
s.p.	school price	SBF	Sex bias free

Periodicals

Better Homes and Gardens. Des Moines, IA: Meredith Publishing Services. ($12.95 per year, 12 issues. Includes features on education, gardening, money, decorating, building, health, pets, food, cars, crafts, travel, and shopping.)

Changing Times. Editors Park, MD: The Kiplinger Washington Editors, Inc. ($15.00 per year, 12 issues. Published monthly. Guidelines for consumers.)

CO-ED. Englewood Cliffs, NJ: Scholastic Magazines, Inc. ($3.00 per school year for 10 issues; $1.00 per single copy. Published monthly–September through June. Special features on fashion, housing; home management; food preparation; nutrition; child development; and the intellectual, social, and emotional interests of teenagers.)

Consumer Reports. Mount Vernon, NY: Consumers Union of the United States, Inc. ($14.00 per year, 12 issues. Guidelines for consumers include ratings and comparisons of food products, appliances, and utensils as well as other consumer products.)

Family Circle. New York: The Family Circle, Inc. ($12.75 annual rate, 17 issues. Features on decorating, health, home projects, fitness, money management, crafts, foods, and fashions.)

Woman's Day. Greenwich, CT: Consumer Publishing Division, CBS, Inc. ($11.85 annual professional rate, 15 issues. Features on home, beauty, housing, health and fitness, crafts, food, and nutrition.)

Pamphlet Sources

Ball Corporation, Muncie, IN 47302. (Home canning and freezing.)

Consumer Information Center, Pueblo, CO 81009. (Consumer education; food, diet, and nutrition; health; children; employment and education; housing; appliances; furnishings; energy conservation; and money management.)

Kellogg Company, Battle Creek, MI 49016. (Nutrition and diet.)

Kerr Glass Manufacturing Corporation, Dept. FC, Box 997, Sand Springs, OK 74063. (Home canning and freezing.)

Kraft, Inc., Kraft Court, Glenview, IL 60025 (Nutrition and food preparation.)

Local County Extension Agents

National Dairy Council, Nutrition Education Division, 111 North Canal Street, Chicago, IL 60606. (Nutrition information and teaching aids.)

Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. (Request a complete listing, SB-291, of publications on food, diet, and nutrition including current price information.)
Examples:
Family Food Budgeting. 15 pp. ($2.50, 1981. Planning good meals and good nutrition based on a variety of incomes.)
Food. 64 pp. ($6.00. Contains a hassle-free guide to a better diet; breakfast; snacking ideas; and recipes.)
Nutrition and Your Health, Dietary Guidelines for Americans. 18 pp., 1981. ($2.25. Summarizes the seven dietary guidelines. Home and Garden Bulletin No. 232.)
Nutritive Values of Foods. 1981. ($4.50. Caloric and nutritive values of approximately 1500 foods.)

United Fresh Fruit and Vegetable Association, 1119 19th Street, N.W., Washington, DC 20036. (Educational aids on fresh fruits and vegetables.)

U.S. Department of Agriculture, Office of Communication, Washington, DC 20250

PUBLISHERS LIST

Bennett Publishing Company
809 Detweiller Drive
Peoria, IL 61615

Blue Goose, Inc.
Educational Department
P.O. Box 1118
Hagerstown, MD 21740

Center for Science in the Public Interest
1755 S Street, N.W.
Washington, DC 20009

Ginn and Company
P.O. Box 2649
Columbus, OH 43216

The Goodheart-Willcox Publishing Company, Inc.
123 W. Taft Drive
South Holland, IL 60473

Prentice-Hall, Inc.
General Book Marketing
P.O. Box 500
Englewood, Cliffs, NJ 07632

Home Economics
Instructional Materials Center
Texas Tech University
P.O. Box 4067
Lubbock, TX 79424

Lane Publishing Company
Menlo Park, CA 94025

Maclean Hunter Learning Resources*
P.O. Box 4381 Grand Central Station
New York, NY 10017

William Morrow & Company, Inc.
105 Madison Avenue
New York, NY 10016

W.W. Norton & Company, Inc.
500 Fifth Avenue
New York, NY 10036

Webster Division
McGraw-Hill Book Company
1221 Avenue of the Americas
New York, NY 10020

*Formerly Butterick Publishing Company